Glasgow
University Library

R.G. [illegible]

THE GLASGOW VETERINARY
COLLEGE INCORPORATED

JAMES M^c CALL.

THE GLASGOW VETERINARY
COLLEGE INCORPORATED

TERINARY MEDICAL SOCIETY
GLASGOW

A III 2 IV
9

BROWN'S MANUAL

OF

MODERN FARRIERY,

A POPULAR AND

Practical Treatise

ON THE DISEASES OF HORSES,

AND OTHER

DOMESTIC ANIMALS,

WITH [illegible] MODELS OF THE [illegible]

VETERINARY MEDICAL SOCIETY
GLASGOW

LONDON: GEORGE VIRTUE.

WIND-SUCKING.

This is so intimately connected with crib-biting that it may properly be considered a modification of it; as it is accompanied by a want of condition, and the same bending of the neck, with the head drawn inward, is manifested, and the horse alternately opens and closes his lips, and a sound is produced similar to sucking air. The remedies attempted have been, tying up the head of the horse, except when feeding; and the application of a muzzle with sharp spikes bending towards the neck, which will prick him when drawing in his head.

NOT LYING DOWN.

Horses are sometimes prone to standing constantly; and some only lie down once in a fortnight, or even a longer period. When this is the case, they are generally liable to swellings in the limbs, and seldom able to go through much work. Such horses should, if possible, be put into a stable by themselves and left at liberty, and a well-made bed will sometimes tempt them to lie down. No means can be adopted to force the animal to take rest by lying down. When it is not possible to place him in a stable alone, an empty box should be constructed so that he may be left for the night unhaltered in it. I had a remarkably fine draught-horse that never was known to lie down, and yet be kept in good condition, and was not troubled with swelling in the limbs: but this is a rare occurrence. He sometimes fell down on his knees while asleep, but the groom always found him on his legs before he could reach the stable, although his house was next door.

SLIPPING THE COLLAR.

Some horses are very expert at getting out of their collar, and range at large in the stable during the night, which subjects them to the liability of being kicked by their neighbours, besides keeping all the others awake. To prevent this, the web of the halter should be accurately fitted to the neck, and made so as to slip only one way ; to this a strap must be attached, so as to buckle round the neck, taking care that it is not too tight.

PAWING.

This is a disagreeable and very bad habit, and proceeds from an irritable temper. Bruised feet and sprained legs too often proceed from it. The shoes are quickly worn down in front, and the litter considerably wasted. The only remedy for this is the use of shackles, to which should be attached a chain sufficiently long to allow the horse to shift his posture and move about in his stall. These to be used only in the daytime, as if kept on at night the horse will not lie down.

ROLLING.

Horses that roll in the stable are apt to be injured from want of sufficient room, and also to get entangled in the halter ; and, strange as it may appear, although he may get severely hurt and be nearly choked by the halter, he will repeat it night after night. The only thing which will prevent him from rolling, is to give him just enough of collar to enable him to lie down, but so short that his head will not touch the ground, because it is impossible he can roll over without resting his head upon the ground. If a horse is in a field, rolling is a harmless and even healthful amusement.

WEAVING.

Animals of an impatient, irritable temper, that dislike

For Grease

Treacle ——	1 lb
Zinc Sulphas ——	1 ℥
NO_5 - (Aqua Fortis) —	1 ℥
Sub Acetas of copper —	1 ℥

Boil together in a vessel rub it on well with the hand.

confinement in a stable, will sometimes keep moving their head, neck, and body to and fro, like the motion of a weaver's shuttle: these have been called weavers. Such horses seldom or never carry much flesh, from their fretful temper and incessant movement. The only preventive is to tie the head close up, except when feeding.

TRIPPING.

Innumerable attempts have been made to cure this dangerous quality in a horse, but few indeed have been the cures. It is only a waste of time to enumerate these. The true remedy is to get quit of the horse.

CHAPTER XVI.

OF SHOEING.

A FINE horse without sound feet may be compared to an elegant building without a firm foundation—both are in constant danger of falling.

It is not known when the practice of shoeing horses with iron was first practised, although it is certain that William the Conqueror introduced it into Britain.

We shall not dwell upon the methods which were practised to preserve the hoofs of horses before the invention of iron shoes, but proceed to consider the best methods now adopted. The construction of our roads and streets render shoeing indispensable ; at the same time it must be obvious that shoeing with iron, and nailing them to the hoofs, is productive of very serious mischief, and is the cause of various diseases, most of which we have already noticed in the preceding part of the work.

Much attention has been devoted by eminent veterinarians to the best form of shoe for the prevention of contraction, and the consequent destruction of the expansion of the hoof; but no means have yet been devised to obviate this completely.

There cannot be a greater error than the possessors of horses exercising parsimonious economy in having their horses shod by those smiths who will perform the office cheapest. The first object with every one should be to get the work well done, because it is being "penny wise and pound foolish" to have the shoes of a horse ill fitted, for the saving of a few pence.

PREPARATION OF THE FOOT FOR SHOEING.

The first thing to be done by the smith is to remove the old shoe, and it is of importance to see that this is performed in a careful and proper manner. Some smiths are very careless and rash in removing the shoe, and instead of turning up the points of the nails, tear off the shoe by force. The shoe is fixed to the foot by nails which penetrate from the sole to the upper surface of the hoof; these are broken off, allowing sufficient length remaining to turn down and be clenched into the horny substance. These clenches should be carefully raised and rendered as straight as possible, so that the nails may be pulled without injuring the hoof or increasing the dimensions of the nail-holes. By thus wrenching off the shoe, there is danger that some of the stubs may be left in the crust and cause future lameness, or portions of the crust itself may be torn off. In most cases, where such violent treatment is practised, the horse exhibits by his flinching that he suffers pain from it, and

is the too frequent cause of animals being troublesome to shoe.

When the shoe has been removed, the crust must be rasped down in the edges; and although a little roughness may be exercised in this, yet there is little danger of injury to the hoof, only that too much must not be removed, so as to render it too thin. The hoof requires considerable labour to pare, and this is of great importance to the comfort of the animal, as well as his safety on the road. It is a part of the operation of shoeing which is too often done in a hurried and slovenly manner. The master of the horse or his groom ought to see that paring is thoroughly performed; because, if the sole is not well pared, its elasticity will be destroyed, and thereby prevented from descending; and this will impair the functions of the foot, and induce all the maladies to which it is liable; namely, the navicular disease, contraction, and corns, as well as inflammation, and all the maladies of which we have already treated. Nothing is of more consequence than to prevent an accumulation of the horny substance of the sole, which, it is easy to see, must increase, because, being protected by the shoe, it cannot get worn down as it would in a natural condition. Sufficient thickness should be left so as to protect the internal parts of the foot from injury, and enough to allow the external sole to descend. This can easily be determined by the strong pressure of the thumb on the sole, which should yield slightly in all its breadth. This operation is performed by what is termed a drawing-knife.

It will happen that the horn of the sole becomes so hard that it is removed with very great difficulty, in which case it becomes necessary to soften it by heat. This is effected by means of a flat iron heated, and drawn over the sole, and even kept close to it for a little time. If the sole is thick, no injury will be sustained from it, and, on the contrary, it will render the paring more easy and less disagreeable to the horse; but if the sole has been regularly pared out during shoeing, this must not be permitted. The quantity of paring necessarily varies much, according to the formation and condition of the foot. The foot which is pumiced should only have the ragged parts cut away; when the foot is flat, little paring is needed; from that which is concave, the crust must be pared until it yields slightly to strong pressure from the thumb; if the foot is strong, a great deal of paring is requisite. Care must always be taken that the crust is not reduced to a level with the sole, as this would permit the sole to press upon the edge of the seating, and thereby be bruised and injured. The entire circumference of the crust should be perfectly level, but projecting a little beyond the sole.

We must now direct particular attention to the heels. More stress is thrown on the inner heel than on the outer, and, from natural weakness of the quarter there, it generally wears quicker than the outer one. This being the case, less horn must be pared from it than from the outer, as taking the same quantity of horn from it would leave it lower than the other, whereas they should be perfectly on a level.

Almost all smiths have a fancy for opening the heels, from the idea that it does good by rendering the foot neater, which is a complete fallacy, as they ought seldom or never to be touched; for, as we have already shown in our description of the anatomy of the foot, the bars are the only check in preventing contraction. Nothing, therefore, should be removed but the ragged and detached portions.

It is intended that the heel of the shoe should rest partly on the bar, and partly on the heel of the foot, consequently the bar should be allowed to remain nearly in its original condition, from its first inflection, and extending down the side of the frog. It is only when the frog becomes level with the crust that it should be pared at all. We have already shown, when treating of contraction, page 158, that when the bars have been removed we have destroyed the props which are the main preventions of that defect.

The quantity to be pared from the frog depends chiefly upon its prominence and the shape of the foot. It must only project so much as to be just within and above the inner surface of the shoe, that is, on a level with the unshod hoof. This will enable it to descend with the sole. If it be higher, it cannot come in contact with the ground; and if lower, it is liable to be bruised.

From what we have shown it will be sufficiently evident that some skill is necessary in the preparation of the foot for the reception of the shoe; and it is equally incumbent on the groom and his master, as well as the smith, to possess this knowledge; and it is well for some one always to be in attendance during the operation of shoeing.

THE PUTTING ON OF THE SHOE.

The foot having been prepared, the smith selects a shoe from among those already made, which he thinks may fit as nearly as possible, and what alterations are necessary are made on the shoe. This frequently requires both the use of the hammer and the file, and the conscientious workman will not nail it on until it is so formed that it rests firmly on the sole, and its external shape precisely corresponds with that of the crust. On the other hand, the careless and inconsiderate mechanic will pick a shoe, and suit the hoof to the shoe, frequently paring the sole and crust to the quick; and often cutting it so thin that it will not hold the nails firmly, besides rendering the unprotected part of the foot liable to be punctured, and exposing the sole to pressure which may occasion lameness, and that too of a permanent character.

A properly constructed shoe should have the web of equal thickness from toe to heel. When thinner at the heel than the toe, it permits the heel to sink too much, which has a tendency to induce sprain of the flexor tendon; and when the shoe is thicker at the back than the front, it elevates the frog too much, is sure to promote disease, and will impair its function, and is certain to bruise the toe, which from its naturally exposed position is more liable to injury than other parts.

Every possessor of a horse should be well acquainted with the different kinds of shoes now in general use, and have such a knowledge of the varied form of hoofs as to enable him to judge the particular kind best adapted to the shape of the foot of his own horse. Country smiths pay too little attention to this point, and with a predilection for one form, apply it to whatever shaped hoof they may meet with.

In a state of nature the hoof of a horse is admirably adapted to give security to its steps; but when the foot is shod, the weight and bearings of the whole limb, or, more strictly speaking, of the entire animal, are changed. It therefore becomes a matter of much importance to investigate what form of shoe is best calculated for this altered condition, and which will produce the least mischief to the feet; for the best of shoeing must ever continue to be a source of diseases and inconvenience to the horse. And any one who strictly investigates the structure of the foot, with its numerous modifications of shape, will soon perceive that no universal form will be suitable for all feet.

Some parsimonious individuals contract with their smiths to supply shoes at a certain sum per annum. From what we have said in this, as well as other parts of the work, it will easily be seen how absurd such a practice is; because the smith will, in nine cases out of ten, put heavy shoes on the horse to save the labour of repeated shoeing; nor will he think of removing the shoes at stated intervals, as we have already recommended.

THE CONCAVE-SEATED SHOE.

Considerable difficulty has been experienced in having enough of room to pass a picker between the foot-surface of the patent-safety shoe and the sole of the foot, more especially where soles are flat, with an inclination to convexity. The consequence has been, the soles of such feet in some cases have been pinched by the pressure of the shoe, although this shoe is not more difficult to fit than any other. To obviate this supposed difficulty, and to meet the views of those who think it desirable, a concave-seated shoe has been invented, concave to the ground, and seated on the foot surface.

This shoe presents a perfectly level surface to the ground, so as to give as many points of bearing as possible. There is a groove round the outer edge, in which the nail-holes are punched; when the shoe is on, the nails project but a little way beyond the general surface of the shoe, but are soon worn level with the face of the shoe.

The web of this shoe is of equal thickness throughout, and parallel from toe to heel, deviating in width according to the form of the foot to which it is to be applied. The foot-surface of the shoe is sufficiently wide to protect the sole from bruises, and as wide at the heel as the frog will permit, in order effectually to cover the situation where a corn grows.

It is *seated* on the foot side, and the outer portion made as accurately flat as possible, and of the exact width of the crust, which it is designed alone to support; so that the entire weight of that union which exists between the numerous little plates which are arranged upon the internal surface of the wall of the foot (which are more particularly described at page 254) and this portion, supports the whole weight of the horse. This flattened portion of the shoe is wider towards the heel, and occupies the entire breadth of the web, to support the heel of the crust and its reflected portion, the bar; so that while it protects the horn included within the angle from injury, it promotes that equal pressure upon the bar and crust, which is most likely to prevent contraction as well as the growth of the corn.

We have given a representation of this shoe, plate xi fig. 1. It is secured to the foot by nine nails, five on the outside, and four on the inner side of the shoe. These are not placed parallel to each other, but the outside ones extend a little further towards the heel than on the other side, because the outside heel has more nail-hold, and is thicker and stronger than the inside. When the feet are of moderate size, and not a great deal of work required of the animal, three nails on the inside and four on the outside will be sufficient, and the last nail being distant from the heel, will permit of expansion in that part. Besides, it is always desirable that as few nails as possible should be used, so that they are sufficient to secure the adhesion of the shoe. That there may be no pressure on the sole, the inside of the web of the shoe is bevelled off, or rendered concave. As we have already explained, the foot of the horse is exceedingly susceptible, and easily bruised if the sole comes in contact with hard substances. Although it is so far protected by the iron shoe, the sole descends slightly, when the foot of the animal is placed on the ground, and is unable to bear constant or even temporary pressure for any length of time; and if it bears upon the shoe, the sensible sole between the coffin-bone and horny external sole would be so much bruised as to occasion lameness, and if long continued it would be of a very serious character. Working horses too early has a strong tendency to flatten the natural concavity of the sole, and may induce a disposition to continued descent. This bevelling of the concave shoe prevents the possibility of injury or sinking of the sole. If the feet are pumiced, the shoe must have an extra degree of bevelling to protect them.

When shoes are flat, gravel and dirt constantly insinuate themselves and lodge there, and are certain upon a journey to bruise and injure the foot; but in bevelled shoes, it is hardly possible for either to remain between the sole and foot, as they would naturally be shaken out every time the foot comes in contact with the ground.

Another advantage in this shoe is that the web is of that proper thickness, that when the crust is properly pared the prominent part of the frog will lie immediately within and above its ground surface, permitting the frog to rest sufficiently on the ground, so as to act as a wedge, and produce a tendency to expansion in the quarters; while at the same time it is protected from the injury it would sustain if it reached the ground with the full and first shock of the weight. In the common shoe the ground surface is a little convex, and its inward rim first comes in contact with the ground; so that the weight, instead of resting fairly on the crust, is sustained by the clenches and nails, which cannot fail to be prejudicial to the crust, and must often tear and splinter it.

The nail-holes must be situated as near the outer edge of the seating as the strength and security of the web will permit. The nails will consequently have a natural tendency to take an inward direction, and therefore will have a firmer hold, and be divested of that strain to which they are subjected in the common shoe.

We have given a representation of the under-surface of this shoe, plate xi. fig. 2.

THE SEATED SHOE.

PLATE XI. Fig. 3.

The seated shoe is of an equal thickness, perfectly flat, and parallel from the toe to the heel ; only varying in width according to the form of the hoof to which it is to be applied, and similar to the ordinary shoe in the fullering, nailing, &c. The foot-surface, however, differs, in having a narrow plain rim, about the same width as the thickness of the crust, extending round the edge of the shoe, except at the heel, where it presents a flat surface, to the extent of an inch ; the other part of the shoe is hollowed out, bevelling from the inner edge of the seat, making it thin except at the heel, which is of the same thickness throughout. The intention is that the crust should bear upon and be supported by the seat of the shoe. The nail-holes are situated in the inner part of the seat, but the nailing is the same in principle as the common shoe.

The advantage of this shoe over the ordinary one is that of the crust resting on a flat surface instead of an inclined plane ; and as it bears on the edge, it is less liable to induce contraction. But with that advantage, yet there are several objections to it. The shoe being flat without the proper degree of curvature, and the mode of fastening by pitching the nails inward, is equally destructive to the crust, although there is no strain upon the nails and clenches, as in the common shoe; and it has been found that its use has not the effect of diminishing the number of corn cases, which arises from the quarters being removed to fit the flat-shoe, and the weight is then sustained more by the heels than the quarters. Besides, it is a difficult shoe to make.

THE EXPANDING SHOE.

This consists of a shoe of the common English form, with a joint at the toe, which the inventor, Mr. Bracy Clark, intended to relieve the feet from the restraint of the shoe and nails, by admitting the natural expansion of the hoof, and thus avoiding all the evils arising from shoes made on the common principle. This, however, has not been realized.

THE HUNTING SHOE.

PLATE XI. Fig. 4.

The hunting shoe differs from that of a horse used upon the road, both in weight and form. It is not so much bevelled off as the common concave-seated shoe, and only enough of space left between the shoe and sole for the introduction of the picker; as, going over heavy ground, the clay would insinuate itself, and by its tenacity would have a tendency to loosen the shoe, or indeed, what has been the case, tear it off altogether. It is also made shorter in the heels, so that they may not be torn off by the toe of the hind feet when galloping.

THE RACING-SHOE.

PLATE XI. Fig. 5.

The racing-shoe, or plate, should be constructed of the best Swedish iron, and made of sufficient thickness to prevent breaking or bending when used. A flat surface on the foot side is generally used ; and the same form of plate as in the shoes intended to be put on after the removal of the plate. Three or four nails on each side according to the size of the foot will suffice. The heels of the plate should not be longer than the horn of the heels, rather a trifle shorter, to prevent them from being torn off by the toe of the hind foot when at great speed.

THE BAR-SHOE.

This is a useful invention to remove the pressure from any tender part of the foot, and throw it on another portion which is quite sound. It consists of the common shoe continued round the heels. Its chief use is in cases ot corns, and it quite covers its seat. It elevates the sole in pumiced feet, and thus secures them from pressure. It is also useful in sand-crack, as by it we can remove the pressure from the slit, and throw it on each side of it. In short, in all the diseases of the foot the bar-shoe will be found very serviceable if worn during these diseases ; but it must be discontinued as soon as a cure has been effected. When the bar-shoe is used for sand-crack or corn, the crust and frog ought to be perfectly parallel, and the bar should be the widest part of the shoe, so that an extended bearing may be placed upon the frog. This shoe, however, is by no means safe during frost.

CLIPS.

These consist of portions of the upper edge of the shoe, hammered out, and turned up so as to embrace the lower surface of the crust, which must be a little pared out so as to receive the clip. The chief use of the clip is to give greater security in attaching the shoe to the foot, and lessening the stress upon the nails, which might prove injurious. In horses subjected to heavy draught, clips are indispensable, and are useful to all employed in draught of any kind. They will be found a useful preventive in securing the shoes from being torn off, when the strain is great on the feet while drawing. Clips are also beneficial when horses are given to stamping and pawing, as either of these tricks are likely to loosen the simple shoe. But clips should only be used in such horses as we have named, because they press upon the crust as it grows down, and are therefore objectionable with horses which are employed in light draught or hackneys.

THE HINDER SHOE.

As the hinder limbs are the chief instruments of progression in the animal, except while walking, the whole stress of the frame rests upon them. In consequence of this, the shoes of the hind feet are always made broader than those of the fore feet, and the toe is widened still more by rasping. When there is the slightest tendency to over-reaching, the toes of the hind feet should be shortened as much as possible, by sloping in the surface, and rendering the shoe somewhat less projecting than the toe The hinder differs a little from the fore foot, in being straighter in the quarters. The nails in the hinder shoe should be situated nearer to the heel than in the fore shoe.

TIPS.

Tips are short shoes which reach only half way round the foot, and are worn by the horse while at grass, as a protection to the crust, to prevent it being injured by any hard parts in the ground. They are especially necessary when horses have a practice of pawing. The reason why these shoes are made short is to permit those feet which have a tendency to contraction, to return to their natural condition by expansion.

PATENT SAFETY SHOE.

PLATE XI. Fig. 6.

This shoe is constructed of malleable cast-iron. This is accomplished by a chemical process called annealing, which renders the cast-iron less liable to break ; as ordinary cast-iron is nearly as brittle as glass. The figure referred to exhibits the ground side of this shoe. The letters *a, a, a, a,* are a raised border, intended to strengthen the inward edge of the shoe, as well as to prevent the intrusion of small stones, flint, and dirt, between the sole and shoe, which it is likely would take place but for this protection.

WATER AND POULTICE BOOTS.

WATER-BOOT.—PLATE XI. Fig. 7.

Considerable difficulty has been experienced in keeping diseased feet effectually wet by the application of a poultice. The usual method has been to put the poultice in a piece of old rag or sacking, and set the foot into it, and to tie the edges of the cloth round the fetlock. It must be obvious that the pressure of the foot will soon displace that portion under the sole, where probably it may be most required. Besides this, the cloth is liable to be cut through by the crust, and consequently the greater portion of the application escapes.

The poultice and water boot is constructed with a leather bottom, defended by iron plating of different sizes. When

required for the application of a poultice, a linen drill top is only necessary; but when required for a continued application of cold or warm water, it is necessary to have two or three thicknesses of Bath-coating sewed together, and cut of a proper form for the top. In order that the whole foot may be subjected to moisture, a bottom consisting of two or three pieces of this cloth are sewed together, of the exact form and size required. The top must be soaked in water, and this will naturally descend to the bottom of the boot, where it is absorbed by the doubles of cloth. To keep the boot duly moist, it would be proper to dip the foot with the boot on into a pail of water occasionally through the day, and immediately before shutting the stable for the night. In this way the cooling moisture may be kept up for any length of time.

However, long-continued moisture has a tendency to destroy the texture of the frog, as well as the tough elastic property of the hoofs. To obviate this, two days in each week should be appropriated to keeping the boots off, and an unguent of tar applied to the surface of the foot, which should be well rubbed in with the hand. This will completely saturate the horn, and prevent that crumbly tendency which manifests itself when the foot is long kept moist. During this time the horse should have a well-supplied bed of litter to prevent injury to the hoof.

If during the two days on which the boots have been removed the animal paws with his foot, it is very liable to sustain injury; to prevent this, the use of a rope-boot will be necessary. See plate xi. fig. 8. These boots of the best construction can be obtained at Mr. Thompson's, No. 185, Regent-street, London. They are the invention of Mr. Joseph Goodwin, Veterinary Surgeon to George IV.

FELT, OR LEATHER SOLES.

In cases of bruised or inflamed feet it has been found of much benefit to insert a strip of leather or felt between the shoe and the crust. The intention of this is to lessen the vibration or shock which is given to the sensible portion of the foot, in consequence of the want of elasticity of the iron shoe. This is useful where disease exists, but must by no means be adopted where the feet are sound; for one reason—the nails can never be so firmly driven in when any substance is interposed between the hoof and the shoe, and by its alternate contraction and expansion with dry or hot weather, it is sure to lessen the security of the shoe; causing too much play upon the nails, and consequently enlarging the perforations in the crust, and rendering a portion of it liable to be torn away.

* * *

CHAPTER XVII.

HOW TO BUY A HORSE.

Little do novices in horseflesh think how many tricks are resorted to by dishonest dealers to conceal the defects of a horse, and take in the uninitiated. To exhibit a few of these will be the aim of this chapter; as well as to throw out several hints which may be useful in assisting the unexperienced in the purchase of a horse.

The first thing to be attended to is the form of the animal; and this differs materially in the various breeds,

and its good points will depend upon their adaptation to particular kinds of work. The head in all the breeds should be fine, broad between the eyes, and tapering towards the nose; the jaws ought to be clean, and not possessing too much flesh; the eye full, sparkling, and lively; the nostrils rather large, open, and of a clear red; the space underneath between the jaws should be roomy, and free from glandular swellings or lumps; the ears should be well set into the head and pointed forwards, but not large; the neck should be well curved, lightly formed rather than muscular, and considerably arched beneath at its union with the jaws; the shoulder should be high and sloping; the withers should be of medium breadth, and not too high, as it will be found that high-withered horses are generally narrow in the chest, which is always a bad point, as not allowing sufficient scope to the lungs, and never so pleasing to the eye as a broad expanded front. Still, some horses have proved both hardy and good in point of action with narrow chests; but these have had depth to compensate for the want of breadth. However, there is a medium in the width of the chest, because great width is invariably accompanied with want of action; and such horses are better adapted for cart or farm purposes.

The back should be short and somewhat arched across the loins; the chest deep, and the ribs expanding, especially between the last rib and the huckle-bone, or hip, so as not to permit of a hollow betwixt them, which is always unsightly to the eye, if it is not a physical defect. No feeding will fill up a hollow in that quarter; nor can a horse be pleasing to the eye which has not well-formed hind-quarters. These should be rounded and full, and the muscles of the hips well developed. A low rump is a characteristic feature of the Irish horse. This is termed among dealers gooserumped. Many blood-horses have this characteristic. Avoid the purchase of one so formed, as they rarely have good action. Horses long in the quarter are seldom serviceable; if a horse is required for field sports, always choose him short in the quarters, as this is a character possessed by all good leapers. The thighs must be muscular, and extending to the hock, from which to the hoof he should be clean, flat, and sinewy. The back part of the thigh ought to have a considerable bend, as a straight-legged animal seldom possesses good action, although there are exceptions to this rule. Avoid those which are cat-hammed, that is, with their hocks nearly touching each other. See that the fore-legs are strong and muscular down to the knee, and otherwise formed as we have described the fore legs. Let the feet be nearly circular, gradually increasing as they descend towards the sole. Their inclination outwards should not be so great as that of the pastern; the chances are that feet which slope too much forwards are diseased, or liable to it; besides, this obliquity throws the animal too much on his heels, which produces tenderness of the part, and straining of the back sinew.

The position of the legs and feet, or what may be termed their setting on, is a most important point. Viewing the horse in front, his legs should be as nearly straight as possible, and his feet neither inclining to the right or left; as feet turned outwards are very liable to cut and trip, and the action of the horse is seldom good or agreeable to the eye, having an outward stride, and loses ground thereby at every step. Horses with an inward inclination are said to be *pin-toed*, or *pigeon-toed*. These generally throw the foot outwards, exhibiting the sole of the foot while in action to those who are standing on one side of him. Such horses have usually a laboured action, which fatigues the animal, and is equal to a third, less or more, of the distance he has actually travelled. The fore-legs should be set well under the fore part of the shoulder, affording ample support to it; such as have their legs placed forward, possess neither power nor action. When the legs are viewed sideways or in profile, they should be nearly straight, as in our representation of the horse, plate 1; but when horses have what are called calf-knees, that is, with a slight inclination inwards, and with the shank sloping forwards, it is a certain sign of weakness, and such horses will always more easily knock up with hard work than those which have straight or even prominent knees.

The hind legs should either be straight from the hock downwards, or having a slight inclination under the belly Horses so formed are for the most part low in the rump, and will throw out their legs well under them when in action. On the contrary, horses which throw their legs outward are always disagreeable to ride, and seldom work well. Horses that stand with their hind legs much under them, and at the same time which droop in the hind-quarters, may be suspected to be diseased in the spine or the kidneys, and should be carefully examined on those points; and while doing so, on no account permit a dealer's servant to hold up the horse by the bridle, or to stand on rising ground. This should be most especially attended to while examining the legs. It is the invariable practice of dealers' grooms when exhibiting a horse to throw the snaffle and curb reins over the head, and to hold him back with the latter, while he touches him up behind with a long whip, which has the effect of making him elevate his head, and brings him to his mettle, and therefore he hardly knows where he places his feet; consequently he will both bend his knees and throw out his feet much more than he does in his ordinary style of going. These wily servants take care always to bring horses to a stand, with his fore-quarters on rising ground, which makes him advance his fore-legs, so as to conceal any knuckling of the knees, or pasterns, and will give a groggy animal all the appearance of soundness. Therefore let the horse that is intended to be purchased, be examined thoroughly on level ground, with his head at liberty.

The first point to be attended to is the crown of the head; to ascertain if he has the disease called *poll-evil*, (see page 48,) examine his nostrils, and if there is a fetid discharge, he will be glandered (18) or have nasal gleet (30.) To ascertain this, the nostrils should be pinched together for about a minute, to prevent him from breathing; and on removing the hand he is sure to snort, which will blow out any matter if he is diseased. The tongue should also be particularly looked at. Examine the eye for gutta-serena and blindness, (45 and 46); see that the withers are not fistulous, (86); carefully scrutinize the knees, (110,) because a horse that has had broken knees must be suspected of stumbling; what he has once done, he may do again; see that there is no appearance of splent below the knee, (114); nor grogginess in the region of the fetlock, (122); nor ringbone of the pasterns, (126); nor thorough-pin of the hock-joints, (130); attend particularly to the hocks, in case they are capped, (131); and notice that there is curb a little way below these points; examine narrowly the inside of the hock-joint, in case bone-spavin or enlargement of the bony substance exist there, (136); descend to the feet, and examine if there are symptoms of grease, (144); see that there does not exist sand-crack in the horny substance of the hoof, (162); nor canker separating the horny substance from the sensible and fleshy part of the foot, (180.) These are a few of the external maladies which the purchaser must particularly attend to, all or any of which dealers will be at no loss to account for. Disbelieve all their eloquent excuses; err on the safe side by rejecting the purchase. Sweeping as this condemnation may be thought, it is unfortunately too true that this class of men are not to be depended upon; and considering the risks which they themselves are liable to, it is not to be wondered at. If the legs exhibit any sign of having been bandaged, a well-grounded suspicion may be entertained that all is not right.

Besides the points to which we have directed attention in the examination of the mouth, are the teeth, whereby the age of the horse is determined. Take care that he has not been Bishoped, (231); or had a tooth extracted, (218.) The different changes of these we have very fully described at page 210. But besides the dental indications, the physical signs of age must also be looked to; because a young horse may have been early and hard worked, and to that extent that he is to all intents and purposes aged in strength and action. When heated by being trotted or galloped, all his infirmities will disappear; but these will re-appear whenever he is again cooled down.

A horse with an upright shoulder is more fitted for harness than riding; and a sloping one is best adapted for riding, from having generally better action and less of his own weight to sustain on his fore legs. A long-necked horse is generally admired; but we consider this a fault, as such are generally weak, and are predisposed to roaring. Short-necked horses are for the most part clear in the wind; but one of medium length should be preferred. When the head joins the neck at too sharp an angle, it is always disagreeable to the eye. Horses whose limbs have marks of having been fired, should never be purchased but at a low price, for it is a proof of disease; although many horses will work well after being cauterised; we have known animals of high reputation as hunters and racers, which have been subjected to this operation.

When the cornea of the eye is of a yellowish tinge, it is indicative of liver complaint. This being observed, turn up the lips and notice their internal structure, and if they are of a similar hue, avoid the purchase of the animal.

If the coat of a horse stares, it is certain he is not in good health. It will be noticed that their dung is either unusually fetid and slimy, or it is soft and washy, like that of a cow. When not disturbed, such animals are languid and sleepy, but dealers take care in showing them off temporarily to rouse them from their lethargic condition, by inserting ginger into their anus, salt into their mouth, and giving them a smart touch or two with the whip; and no sooner does the master enter the stable, than they commence champing their bits, cocking their tails, and exhibiting for a short time all the appearance of perfect health and spirits. In the meantime, the dealer exerts his clap-trap eloquence to induce the novice to believe the animals are the best and most active horses in Britain; and they too often succeed in inducing such a belief. The hand should be drawn over the ribs, and the finger pressed firmly between them. If the skin appear tight and unyielding, it may be inferred that he is hide-bound, and consequently labouring under some internal disease. I would particularly direct the attention of the purchaser to the mark of a cut which may be some inches in length, and situated parallel with the shank-bone, immediately below the pastern-joint. If such a mark is found, it is certain that the nerve operation has been performed, which we particularly noticed at page 245. Such a horse should instantly be rejected.

In examining the foot, if the front and sides of the hoofs are marked with circular depressions, running parallel to the coronet, it is certain that severe inflammation has existed at one time in the sensible portion of the foot, and is consequently liable to return again. See that both fore feet, as well as the hind ones, are of equal size, and ascertain that they are quite cool, and equally so. Attend to what we have already said respecting the examination of the sole, and its proper form. Thrush may be detected by the fetid smell of the foot, besides the other symptoms which we have described.

As the feet of horses are of such importance, we would especially recommend to all to acquire a thorough knowledge of them ; and we know no better plan than to attend daily at a well-employed shoeing-forge, and for a small gratuity the smith will allow the various feet to be examined ; and if he has had experience, he will be able to point out readily the indications of disease. He will also see why differently formed hoofs require the shape of the shoe to be modified, and adapted to the peculiarity of structure, or probably existing disease.

The next important point to be attended to is the wind and breathing of the animal. Study all we have said on the different complaints connected with the lungs ; namely, roaring, broken wind, whistling, &c. The wind may be tested by pinching the windpipe immediately behind the jaw. If the horse give a long sharp cough, it is an indication that he is sound in that respect ; but if the cough be short and hollow, it may be inferred that he has unsound lungs : let gentle pressure on the windpipe be frequently repeated in order fully to test this. Be sure to perform this test with your own hand, as dealers know that by compressing the windpipe firmly with one hand and the fore-finger of the other, the horse is forced to cough while they do so, which produces that shrill sound considered a test of good wind, by the air rushing through the limited aperture. Having satisfied yourself by this first experiment that the horse is sound in the wind, proceed next to watch the flanks in breathing. If the belly of the animal swells out, and the inspirations and expirations are regular, it may be reasonably inferred that his lungs are sound; but if these are irregular, and the inspiration stops before it is completed, with a considerable drawing in of the flanks, with the ribs very apparent, then it is certain his lungs are unsound. The third test of broken wind is to trot the horse pretty sharply, and watch the motion of his flanks, and observe if he utters a noise in breathing, with considerable blowing. If this is the case, reject him.

To examine whether a horse is a roarer, piper, or whistler, place him with his side against a wall or the side of the stall; take hold of the bridle near the mouth, and hold his head high, and give him a smart blow on the ribs with your doubled fist, or touch him smartly on the belly with a stick; and if he utters a grunt at each blow, he is a roarer; and if he dances about in consequence of the blows, sobbing, and drawing his breath quickly, this will be found an indication of his being a whistler, or piper. But for testing all diseases connected with the lungs, nothing is better than a good gallop or hard trot. Consider no time wasted which is spent in thoroughly investigating all points connected with the health of a horse.

Having satisfied yourself on the above points, stand in the rear of the animal, and scrutinize carefully the prominences of the hip-bones, and see whether or not they are on a level, and especially mark the round bones, which are situated a little posterior to the prominences of the hip. This is liable to lameness from strains, blows, and other causes. If there is any fault here, there generally will be a wasting of the muscles, and the defect will be more readily detected when he is in motion. If any symptoms of lameness are observable, pass the hand over the spot, and heat will be found to exist in it, and it may be probably verified by the smell of some liniment, which may have been applied.

When examining a horse, never permit the dealer's man to hold his head high, nor to place his fore feet on rising ground ; because, while a horse stands in this position, the defects (if he has any) of his fore legs will not be apparent ; whereas if he stands with his feet upon level ground, if the limbs have been shaken from hard work, they will exhibit a tremulous appearance, and the knees will be more or less bent, and the heels will not rest firmly on the ground, as they ought to do. Horses that have been severely worked, have the fetlocks of the hind legs bent and relaxed, and the natural elasticity of the tendons and ligaments will have departed. The horse that is groggy, when standing in a quiescent state, will be found in a posture leaning over the fore legs, the feet of which will be further under the belly than the upper part of the leg, and the entire limb forming a flat semicircle with the knee at the extreme point of the curve.

In looking at the action of a horse, see that his fore feet are lifted high, and that he completely clears the ground and throws his legs out freely and lightly. This is especially necessary in a saddle-horse. Horses with a short, confined step, can never have good action, and are always disagreeable to ride. In walking, the knee ought to be moderately bent, but only sufficiently so that he may fairly clear stones and other objects which he may meet with on a road ; and when the foot is set down, the sole should fall flat, so that the toe does not first touch the ground. The legs should be thrown straight out ; that is, the toes should neither be turned outwards nor inwards, nor should the sole be seen by a person standing on either side. In a larger-sized horse, the step must be lengthy and regular ; in a smaller, compact horse, it ought to be sharp, active, and springy ; and in either the marks produced on the ground by the fore feet should be stepped on by those of the hind feet ; if, however, the animal is wide hipped, the hind feet will rest on the outside of the marks left by the fore feet. The head should be carried high.

In trotting, see that the horse does not lift his feet too high, and that he places them flatly and firmly on the ground, for if the toe first touches the ground, he is liable to trip. If the shoe is examined, it will at once indicate the part which comes soonest in contact with the ground, by being most worn down. Blood-horses never raise their feet so well as those of more inferior breeding, and are in consequence not so safe to ride upon the road. Their action in the trot will, however, be found much more pleasant and easy to the rider. Blind horses are almost invariably high steppers, and therefore whenever you find a horse lifting his legs very high, it would be prudent to examine his eyes carefully.

Ladies generally prefer horses which go at a canter instead of a trot. Indeed it is a much safer action for them, in consequence of their peculiar seat. In the choice of a lady's horse, take care that he has been accustomed to lead with both legs ; because he is capable of longer duration, and the wear of his feet and shoes will be more equal. In the canter the hind legs should be thrown well under the body, because it is a minor species of gallop. It will be found that horses with an oblique shoulder will perform both the canter and gallop better than those which are more upright.

If a horse is required for speed, do not choose one which holds his head high, as such is incompatible with a great stretch; consequently the style and bearing of a horse intended for show and park use is very different from those intended for rapid action; and these latter always carry their heads low. It is the habit of blood-horses always being trained to go over a smooth and level surface, which is the cause of their not lifting, being unaccustomed to meet with obstruction in their way. The hunter, on the contrary, being subjected to all kinds of ground, soon acquires the habit of lifting his feet sufficiently high to enable him to surmount all the difficulties which he must constantly encounter. The style of their gallop must also be essentially different: that of the racer, a lengthened stretch; and of the hunter, a rounded gallop.

CHAPTER XVIII.

GENERAL HISTORY OF THE HORSE, WITH AN ACCOUNT OF DIFFERENT BREEDS.

PLUTARCH says a good man will take care of his horses and dogs, not only while they are useful to him, but also after age renders them unfit for service. A beautiful illustration of this benevolent maxim is recorded of the Athenians, who, when they had completed the building of the Hecatompedon, set at liberty the animals employed in its erection. It is related that one of these at the head of his fellow-labourers, some time after the completion of the temple, led the way to the citadel, which so highly pleased the people that a decree was made by the senate, enacting that these faithful and willing servants should be kept the remainder of their lives at the public expense.

Near the tomb of Cimon were placed the graves of the mares who bore him, on three several occasions, victorious at the Olympic games.

Every humane mind must feel sensibly alive and indignant at the brutal treatment to which that noble and generous animal, the horse, is but too frequently exposed in Europe. The ass, also an animal of great sagacity and gentleness, is almost invariably treated with savage barbarity. Let these unprincipled and unfeeling wretches look to the mutual love which subsists between the Arab and his steed, and the kindness manifested by the people of eastern countries to their asses and mules, and the benefit they derive from such a mode of treatment. If no other principle will awaken their kindly feelings towards those most useful animals, surely that of self-interest should stimulate them to adopt gentler measures.

The first breaking and training of the horse should only be intrusted to persons of mild dispositions, as it is by kind and patient treatment alone that we can hope to succeed in rendering this valuable animal truly useful and docile; for although force may produce obedience, it will be found, as with man himself, that as soon as fear has subsided and the animal has discovered its own strength, revenge will generally follow. I have no doubt that in nine cases out of ten where horses betray furious or stubborn tempers, that these have been produced from the cruelty or ignorance of their first trainers. The horse is an animal of great intelligence; but everything addressed to his perceptions should be clear, short, and distinct, for he is incapable of following a train of spoken language. Few words, delivered with precision, accompanied by caresses and gentle treatment, will be found more effectual than any other course.*

The domestication of the horse may be regarded as one of the most important acquisitions made by man from the animal kingdom. Without this useful quadruped, civilization must have made comparatively but little progress, and we should have been later by many centuries in emerging from barbarism. The horse contributes largely to our luxuries, pleasures, and service; he facilitates and lessens the labours of the field; he transports burdens, and man himself, to the most distant parts, with certainty, celerity, and ease; he is ever the faithful and obedient servant of his master. His form, sagacity, and temper, have been most admirably and wisely adapted for our use; he is fitted in an eminent degree to fill a most important part in the scale of being.

The horse is framed with such a pliability of physical structure and constitution, that man may mould him to the form or bulk best fitted for the particular service in which he is to be employed. Whether we contemplate the powerful and symmetrical structure of his frame, the elegance of his limbs, evincing strength and speed in their movements; the delicacy and glossy sleekness of his skin; his large and sparkling eyes, which either beam with mild intelligence, or flash with energetic fire; or the docility and tractability of his disposition, we cannot fail to regard him as one of the noblest of animated beings. In addition to these qualities, he possesses the most intrepid courage; he has been from most remote times the bearer of man in the field of carnage,

---

*Wo! used by carters to horses, is derived from the Norman-French, and signifies, "attend, stop, listen." Gee! is derived from the German verb *gehen*, "to go."

where he fearlessly meets every danger; the most appalling discharges of musketry and the thunders of a cannonading, he faces with a fortitude as dauntless as that of his rider, and seems even to enter into the spirit of the attack. This has been his character from the earliest ages; for he is spoken of in Job, one of the oldest books in the world, and, few will deny, one of the best ever written, in the following powerful language, which is amended from the common translation by my late learned friend Dr. Scot, Professor of Hebrew in the College of St. Andrews:—

"Hast thou given spirit to the horse? Hast thou clothed his neck with a mane? Canst thou make him bound as a locust? The majesty of his snorting is terrible. He paweth in the valleys and exulteth; he goeth on to meet the armed men. He mocketh at fear, and trembleth not; nor turneth he back from the sword. Against him rattleth the quiver, the glittering spear, and shield. He devours the ground with fierceness and rage, and is impatient when the trumpet soundeth. He uttereth among the trumpets, Ha! Ha! He smelleth the battle afar off, the thunder of the captains, and the shouting."

The time at which the horse was first domesticated is now lost in the cloud of antiquity. He is mentioned by the earliest writers, and in all probability his subjugation has been nearly co-eval with the earliest state of society. From the Scriptures we learn that seventeen hundred and two years before the Christian era, horses were used; for in the 47th chapter of Genesis we are told that Joseph gave the Egyptians bread in exchange for horses. It seems probable, from the earlier chapters of Genesis, that horses were unknown to the Hebrews and Egyptians; as we find from the 12th chapter of that book that Abraham "had sheep and oxen, and men-servants, and maid-servants, and she-asses, and camels," but no mention is made of horses; this was 1920 years before the birth of Christ.

But after this time they seem to have propagated and greatly increased in Canaan; as it is said in the eleventh chapter of Joshua and fourth verse, of certain kings opposed to Joshua, that there were "much people, even as the sand that is upon the sea-shore in multitude, with horses and chariots very many."

From many other parts of holy writ we find that horses were numerous in most of the kingdoms of the East, but no mention of the country from whence they were originally derived. It is a generally received, although erroneous opinion, that Arabia was the native country of the horse. We find that even so late as the seventh century of the Christian era, when the prophet Mahomet attacked the Koreish, not far from Mecca, he had only two horses in his train; and although, in the plunder of this horrible campaign, he carried with him in his retreat twenty-four thousand camels, forty thousand sheep, and twenty-four thousand ounces of silver, there is no mention of horses being part of the booty.

Solomon's stables seem to have been magnificent. He kept horses both for pomp and gain. His stud, even in our own times, is unequalled. He is said to have had four thousand stalls for horses and chariots, and twelve thousand horsemen! The price of a horse in those days was fifty shekels of silver, which amounts to about seventeen pounds, two shillings sterling; a very large sum at that remote period. *

---

* Dr. Scot wrote me upon this subject:—"We allow that there is some controversy among scholars about the exact number of the stalls, and we dare not say that no mistake is introduced into the text The probability, indeed, is very great that the most ancient and

It seems certain that Egypt was the first country in which the breed of horses was first improved, and from whence most of the early Eastern monarchs procured their studs. Solomon obtained many from thence; and although it abounded in horses, still I think it more than probable that the Egyptians obtained their best steeds from the south, as the local situation of that country was but ill adapted to preserve them in perfection. This monarch, as well as several of his successors, obtained coursers from Togarmah, now understood to be the modern Cappadocia, or the lands which border the Euxine Sea, which was in early times the seat of several flourishing and powerful kingdoms.

To trace the history of the progress of the horse from that period to the present times would require a larger space than our limits will admit, and we must now turn to that part of his history which refers to the place of his nativity.

Left only to conjecture, we can only suppose, from a combination of circumstances, that Asia was the original country of the horse; for there he is found to the present day roving in unrestrained freedom, and we are without any historical record of his having been introduced by man into those extensive wilds. One thing is quite certain, that he was not found either in America or New Holland on the original discovery of these continents. The great tract of desert country around the Sea of Aral, as well as those of the Caspian Sea, have been supposed to be the native resi-

---

authentic copies of the text are corrupted. We should conceive that four thousand was a large number. This indeed is stated to be the number in 2 Chronicles, chapter ix. verse 25th; and even the parallel passage in 1 Kings, chapter iv. verse 26th, commonly translated forty thousand, will bear to be so interpreted."

dence of the horse; but if this conjecture be correct, he must have widely extended his geographical range, for he is found in a wild state in Asia, as far north as the sixtieth degree, and to the utmost southern extremes of that vast continent, and also in many parts of Africa.

On each side of the river Don horses are found in a wild state; but these are supposed to be the offspring of Russian horses which were used at the siege of Azof, in the year 1697, as many were turned loose upon that occasion for want of forage. In South America, on those immense plains extending from the shores of La Plata to Patagonia, immense troops of horses are found, sometimes to the extent of ten thousand individuals. These are the offspring of emancipated horses which were taken to that continent by the Spaniards; for it is quite certain that the horse was unknown in America when that continent was first discovered. Indeed, the natives considered the horseman and horse as one animal. There great troops do not always feed in company, but are dispersed into smaller herds, and only congregate when they are alarmed. These animals are impelled by a natural instinct, which looks remarkably like reason, for they are invariably preceded by a leader in cases of alarm, and are sensible that their safety consists in united force, and a principle of subordination—the first things to be attended to, even by man himself.

In a domestic condition the horse is found in every country, such being the pliability of his physical constitution, that he thrives in very opposite extremes of temperature, except within the limits of the arctic circle itself. But in Great Britain he seems to have acquired the highest degree of symmetrical proportions and powers of speed; as our race-horses are universally admitted to be the finest and fastest gallopers in the world.

The celebrated race-horse, known by the name of Flying Childers, was the fleetest horse that ever ran, having repeatedly accomplished nearly a mile in a minute ; and, carrying nine stone two pounds, has been known to perform the course at Newmarket—which is three miles and three hundred and sixty yards—in six minutes and forty seconds, or at the rate of eighty-two feet and a half in a second of time. Eclipse was next to him in fame, and nearly his equal in speed, but considerably his superior in conformation, and from whom spring most of the finest horses which this country has produced.

Long ages of domestication, as well as the variety of climate to which horses have been subjected, has produced the great varieties in size and general conformation in the horse. Every country possesses horses with a peculiarity of character belonging to itself ; and in each country there is great diversity of shape and size.

SECTION I.—OF BRITISH HORSES.

THE ENGLISH RACE-HORSE.

The form of the head, in this horse in particular, is like that of the Arabian. His beautifully arched neck is finely set on, and his shoulders are oblique and lengthened ; his hind legs are well bent, his quarters are ample and muscular, his whole legs are flat, and rather short from the knee downwards, although not always so deep as it ought to be, and his pasterns are long and elastic.

The thoroughbred horse is by no means a safe one to ride on a road, as he seldom lifts his fore feet high enough to enable him with certainty to clear the inequalities of the road. His action, in consequence, is much more pleasant ; and he possesses another quality of much importance,

namely, that he seldom or never will shy at any object on the road; two things of valuable consideration to the rider.

Thoroughbred is a term employed in Britain to indicate the descent of a horse from a South-Eastern courser. The English racer has therefore been the progressively improved breed, from a commixture of our own horses with those of Asia. The horses of the first blood, or such as are the nearest possible to the Eastern stock, are those immediately produced from the Arabian, or Barb; any stallion with an English mare, which has been already crossed with a Barb or Arabian steed, in the first degree; or that which has sprung from two crossings in the same degree. In its action the English race-horse is somewhat like that of the Arabian, but differs from the Spanish horse in carrying the whole of his frame forward with an energetic power, while the motions of the latter are measured with more of a graceful motion and shorter step.

In breeding, a mare should be chosen with as great a proportion of the blood of King Herod as possible. She should be deep in the girth, long and full in the fore-arm and thigh, short in the leg, standing clean and even upon the feet, and wide and spreading in the hind-quarters. It is a curious fact that the produce of our first-rate mares and an Asiatic horse seldom or never are good racers; and they must be one remove at least from the foreign stock before they can be depended upon.

THE HUNTER

Is a combination of the thoroughbred race-horse and half-bred horses of greater strength, and less lengthy in their carcase. He should be from fifteen to sixteen hands in height. The points most likely to discover a horse of good proportions as a hunter, are a sanguine and healthy colour, with a lofty fore-hand, a head and neck as light as possible, clear wide jaws and nostrils, large and thin shoulders, strong and muscular thighs, deep chest, and short back. Above all, his joints should be strong, firm, and closely knit, his legs and pasterns rather short; for I believe there never was yet a long hinder-legged horse that was able to gallop down steep hills and take bold leaps with a weight upon his back, without sinking or foundering. And, lastly, his feet should be moderately large, and sound.

THE HACKNEY, OR ROADSTER,

Should be a hunter of a small size; his height not exceeding fifteen hands and an inch; rather below than above that size. His make should be more compact than that of the hunter, with considerably more substance according to his height, so as to fit him for the fatigues of everyday-work. His forehand should be high, but rather light; his head small, and placed on the neck in a gradually tapering manner, with a clear, full, and sprightly eye; his shoulder should be deep and large; his back straight, and his loins strong; his withers well raised, his fillets wide; and his croop gradually descending, but must not drop too abruptly, nor must his tail be too low set. The fore-arm and thighs should be strong and muscular; and the legs rather short than otherwise, straight, and rather near set, but the touching of the hoofs to be carefully avoided An essential point is, that the shank-bone should be solid and flat. It is of great consequence that the bones beneath the knee should be deep and flat, and the tendon not too much tightened. His feet ought to point straight forward, with the heels wide and open; the fore-legs closely set, and as straight as possible; for a horse with bent knees is very likely to stumble and fall when his feet come in contact

with the smallest obstacle or inequality of the road. In his action he ought to lift his fore-legs high, and have a well-bent knee; his hind-legs should be placed considerably behind him, and widely set.

We must, however, remark, that he ought only to lift his fore-legs *moderately high.* Some are of opinion that the higher he lifts them the better, and conceive that while possessed of this quality he never will come down. This is a mistake, and it will be found that a horse that raises his feet too high in trotting, produces a disagreeable action, and shakes and fatigues even the best of riders; besides, he batters his hoofs to pieces in a few years. The principal thing to be attended to is the manner in which the hackney puts his feet to the ground; for if his toes first touch the road, he is sure to be a stumbler; the foot should come flat down on the whole sole at once, otherwise the horse is not to be depended upon in his trotting. But every rider in passing along a road should be constantly on his guard, as the best horse may come down by a rolling or loose stone getting under his feet, and therefore his mouth should always be felt by the rider.

Some persons prefer hollow-backed horses on account of their paces being generally easy; but it is an ascertained fact that they will never stand much work: the back should be straight and rather short than otherwise. Many suppose that if the fore legs of a horse are close, the feet must necessarily cut the pasterns; but this is by no means the case, as it is only when the feet are twisted or irregularly set in one way or other that they cut. Indeed a saddle-horse can hardly be too close before, or too wide behind.

Another most essential point in a hackney is, that his sight is good, otherwise he is sure to shy at every object which suddenly meets his vision; and consequently by starting to one side is very apt to throw his rider.

THE CHARGER.

Much diversity of opinion prevails in this, as well as in other countries, respecting the kind of horse best suited for a charger. At one period, the whole British cavalry were mounted on strong, heavy horses, which were bred from the large Flander's horses, crossed by those of Britain. But in the peninsular campaigns, it was found that lighter horses, with a considerable proportion of blood, were the most useful, as they got over wet, marshy tracts of country better than heavier horses. The qualities of a charger, or troop-horse, are much the same as those of a hunter. His action should be great, as well as his spirit; the neck deep and arched, with a large swelling breast; the ribs full and finely bent; the chine broad and straight; and the rear round and full; the legs broad and flat, and the pasterns short. In action, the charger enters into the spirit of the attack, as the hunter does that of the chase. In the words of the poet,—

> "The fiery courser, when he hears afar
> The sprightly trumpets and the shouts of war,
> Pricks up his ears, and, trembling with delight,
> Shifts place, and paws, and hopes the promised fight.
> On his right shoulder his thick mane reclined,
> Ruffles at speed, and dances in the wind:
> His horny hoofs are jetty black and round,
> His chine is double, starting with a bound,
> He turns the turf, and shakes the solid ground;
> Fire from his eyes, clouds from his nostrils flow,
> He bears his rider headlong on the foe."

The charger which has been in many battle-fields retains as long as he lives a remembrance of his past services, which

is thus beautifully expressed in "The Pleasures of Memory," one of the finest didactic poems in our language :—

> "And when the drum beats briskly in the gale,
> The war-worn courser charges at the sound,
> And with young vigour wheels the pasture ground."

THE COACH-HORSE.

The better kind of coach-horses owe their origin to the Cleveland bays ; the greatest attention being paid to breeding them in Yorkshire, Durham, and Northumberland. Some fine horses of this kind have also been bred in Lincolnshire. The most useful are those which are propagated by a cross of the Cleveland mare, with a three-fourth or thoroughbred horse of sufficient substance and height. They have a fine knee action, lift their feet high, which gives grandeur to their figure and paces ; the head is generally well carried, and with a beautifully elevated crest.

THE CLEVELAND BAYS.

This fine breed emanated from Cleveland, in Yorkshire, but are now bred in Northumberland and Durham. They are of a superior size and of a good form, with a strength and activity surpassing most other horses. They are chiefly distinguished by their bay colour. Mares of this breed, with full-blood stallions, produce excellent hunters and roadsters ; and with half-bred stallions, an offspring very suitable for farm purposes, particularly that of ploughing.

THE DRAUGHT-HORSE.

Much variety of opinion has prevailed respecting horses for the purposes of draught, and consequently these are found to vary throughout the kingdom ; but one principal character now prevails, that of weight, to give them more physical force. For ordinary purposes they should not be above sixteen hands high, with a light, well-shaped head and neck, short pricked ears, and brisk, sparkling eyes; the nostrils large and wide, to allow freedom in breathing; their chests should be full and deep, with large, strong, muscular shoulders, but rather lower in front than otherwise; that is, with a large and round rump, which should be higher than the forehand; the tail firm, strong, and well furnished with hair; the back straight and tolerably long, but not too much so, as that is found to impair the general strength of the animal; the legs should be rather long, flat, and broad; the fillets large and swelling, the joints closely knit; they should stand wide on all their legs, the hind-quarters being wider than the fore.

Large horses are better adapted for waggons, and have frequently been bred seventeen hands high, and even more, with elevated forehands, and deep counters. The great object in the breeding of draught-horses is to increase strength, activity, and power; to remove weight as much as possible, and procure them of the height of sixteen hands for general utility. Indeed it has been proved that horses of this size have performed feats of strength of greater magnitude than those of elephantine proportions. I remember to have seen a black cart-horse, of sixteen hands, draw thirty-six hundred weight of baggage, from Glasgow to Stirling, a distance of twenty-seven miles, in about eleven hours. Instances have been known where a single horse has drawn a weight of three tons for a short distance. In former times, when burdens were removed from one locality to another by horses without carts, the pack-horses of Yorkshire were accustomed to carry the weight of four hundred and twenty pounds over the old roads, which usually traversed high and precipitous hills.

THE SUFFOLK PUNCH-HORSE.

This hardy and active breed has now become nearly extinct. They are rather under sixteen hands in height, and their colour chestnut or sorrel. Their heads are rather large and coarse; their ears being too long and placed too distant from each other for modern taste. The body is deep, capacious, and compact; the shoulders wide and thick at top, and somewhat low, with the rump more elevated than the shoulder, which it is supposed enables them to throw much of their weight into the collar. They are large and strong in the quarters, full in the flanks, flat and short in the legs, with short pasterns.

In the "Sportsman's Repository" we are told that "they were the only race of horses which would collectively draw repeated dead pulls, namely, draw pull after pull, and down upon their knees, against a tree, or any body which they *felt* could *not* be moved, to the time of Jup, Ji! ! and the crack of the whip, (once familiar, but abominable sounds, which even now vibrate on our auditory nerves) as long as nature supplied the power, and would renew the same exertions to the end of the chapter."

The hideous yelling of most carters and farm servants, which is still prevalent when driving horses, not only in this country, but also on the continent, is a barbarous custom; for I have known many instances where gentlemen subdued this practice in their servants, and the most gentle and temperate accents were found to succeed better than the frightful and thundering exclamations in general use. Every possible means should be used by those who have either influence or power over that class of men, to abolish this noisy and useless practice, which not only stuns the poor, willing animal, but is also a great nuisance while passing through the streets of a town.

The old Suffolk breed of horses brought very high prices, but of late a larger breed has become more fashionable in that country and neighbouring districts, which for largeness and beauty certainly excel the old breed. They have been produced from a cross with the Yorkshire half and three-part bred horses of the coach kind, and are particularly beautiful and lofty in the forehand. In the year 1813, at a sale in Suffolk of the stock of a celebrated breeder, which was, in consequence, numerously attended by persons of rank and opulence, the horses brought considerable prices. The following were a few of them :—A mare, with a foal at her feet, £124. 4s. ; a three-year-old filly, £85. 1s. ; a mare, which had lost the sight of one eye, but of a beautiful form and powerful make, £98. 14s. The whole of his stud consisted of fifty mares, geldings, and foals, and brought the large sum of £2,263. 13s. 6d.

SECTION II.—OF ASIATIC HORSES.

THE ARABIAN.

Arabia being sufficiently above the level of the sea, and having a surface composed of sand, mixed with a portion of vegetable mould, (a circumstance favourable to pasture-ground,) and the plains of Persia, situated still higher above the ocean, and consisting of a deposit of alluvial soil, resting on granite, are naturally dry, and by means of their heat attract moisture from the horse. On the other hand, the aromatic vegetation, which is there strong and succulent, drives from him those humours, the exudation of which is favoured by the imperceptible, but continual, pe

spiration incidental to a warm climate. The consequence is, that the horses of those and other countries with similar pasturage, are completely free from the strangles and other glandular diseases, which are so frequent and fatal to those of Europe.

The pure Arabian is considerably smaller than our race-horse, seldom exceeding fourteen hands two inches in height. His head is very beautiful, clean, and wide between the jaws; the forehead broad and square; the face flat; the muzzle short and fine; the nostrils large and open; the eyes prominent and brilliant; the ears small and handsome; the skin of the head thin, through which may be distinctly traced the whole of the veins; the neck rather short than otherwise. The body, as a whole, may be considered too light, and the breast rather narrow; but behind the fore legs, the chest generally swells out greatly, and with much depth of ribs, leaving ample room for the lungs to play; the shoulder is superior to that of any other breed; the scapula, or shoulder-blade, inclines backward, nearly at an angle of forty-five degrees; the withers are high and arched; the neck beautifully curved; the mane and tail long, thin, and flowing; the legs fine, flat, and wiry, with the flanks placed somewhat oblique, which has led some to suppose that their strength was thereby diminished; but this is by no means the case: the bone is of uncommon density, and the prominent muscles of the fore-arms and thighs prove that the Arabian horse is fully equal to all that has been said of his powers. The Arabian is never known in a tropical climate to be a roarer, or to have curbs; the shape from the point of the hock to the fetlock being very perfect. It is a remarkable fact that the skin of all the light-coloured Arabians is either pure black or bluish black, which gives to white horses that beautiful silvery grey colour so prevalent among the coursers of noble blood. If an Arabian horse exceeds fourteen and-a-half hands in height, the purity of the blood is always doubted in India. Three of the swiftest horses which were known in our own times at Madras, were under fourteen hands.

Above all others, the Kohlan horse of Arabia is distinguished for his superior qualities and the beauty of his form. He possesses an uncommon mildness of temper, an unalterable attachment to his master, a courage and intrepidity as astonishing as they are innate in his noble breast, an unfailing remembrance of the places where he has been, of the treatment he has received; not to be led, not to be touched but by his master; in the midst of carnage in battle he is cool and collected; he never forgets the place he came from, and though mortally wounded, if he can gather up sufficient strength, he carries back his desponding rider to his defeated tribe. His intelligence is wonderful, and he seems to know when he is sold. When the proprietor and purchaser meet for that purpose in the stable, the Kohlan soon guesses what is going on, becomes restless, gives from his beautiful eye a side-glance at the interlocutors, scrapes the ground with his foot, and plainly shows his discontent.

The action of the Arabian in his native plains is very beautiful. He carries his head high, which gives him a dignified aspect; his tail is turned up in the air, and forms a most graceful curve, which our English dealers have vainly attempted to imitate by the cruel and absurd practice of nicking the vertebræ.

In Arabia the horse is treated with the utmost gentleness, kindness, and affection. He inhabits the same tent with his master and family. His wife and children, with the mare and her foal, associate together in indiscriminate friendship, occupying the same bed, where the children may be seen prattling with and climbing over the bodies, and hanging round the necks of the docile creatures, who in their turn will frequently repose with their heads inclining on some one of the family. Whipping, by an Arab, is considered the greatest cruelty to horses, and it is by gentle measures alone that he secures the willing service and affection of his steed. Their friendship is mutual; for if the rider falls, although in the most rapid career, the horse instantly turns round, and halts till remounted by his master.

The Arab will never sell a mare on any consideration whatever. The genealogies are always recorded from the dams. In the pedigree of their steeds they are more particular than any other people on earth; it is an undoubted fact that they have pedigrees among them of not less than five hundred years. In this respect they look upon it as of more importance than that of their chiefs. Among the great dealers, they pride themselves upon being rigidly strict, and are more to be depended on than many of those of Europe in the pedigree of the horses they offer for sale. Weston, in his "Fragments of Oriental Literature," gives the following pedigree, which was hung about the neck of an Arabian, purchased by Colonel Ainslie during the campaign of Egypt:—"In the name of God, the merciful and compassionate, and of Seed Mohammed, agent of the high God, and of the companions of Mohammed, and of Jerusalem! Praised be the Lord, the Omnipotent Creator! This is a high-bred horse, and its colt's tooth is here in a bag about his neck, with his pedigree, and of undoubted authority, such as no infidel can refuse to believe. He is the son of Rabbamy, out of the dam Lahadha, and equal in power to his sire—of the tribe of Zazhalah. He is finely moulded, and made for running like an ostrich, and great in his stroke and his cover. In the honours of relationship, Zaluah reckons Lalaack, sire of Mahat, sire of Kallack, and the unique Alket, sire of Manasseth, sire of Alsheh, father of the race down to the famous horse, the sire of Lahalala;—and to him be ever abundance of green meat, and corn, and water of life, as a reward from the tribe of Zazhalah, for the fire of his cover; and many a thousand branches shade his carcass, from the hyæna of the tomb, from the howling wolf of the desert; and let the tribe of Zazhalah present him with a festival within an enclosure of walls, and let thousands assemble at the rising of the sun, in troops, hastily, where the tribe holds up under a canopy of celestial signs within the walls; the saddle, with the name and family of the possessors. Then let them strike the hands with a loud noise incessantly, and pray to God for immunity for the tribe of Zoab, the inspired tribe."

The Arabs have a breed of horses which they pretend is descended from the stud of King Solomon; but this, of course, is not the case; at all events, exceedingly unlikely.

The Persian, Tartar, and Turkish horses are all somewhat similar to the Arabian, but not so perfect in their symmetry.

THE PERSIAN HORSE.

From the most remote ages Persia has been famous for its breed of horses, which even now are only excelled by the Arabian breed. The former, however, were noted for their excellence long before we have any account of the latter. The Persian horse is considerably larger than the Arabian. The neck is beautifully arched, with a finely-formed crupper, and the whole frame more developed. We are informed by historians that Alexander the Great considered a Persian horse as a gift of the highest value; it was one which he only bestowed on potentates, and favourites of the first class.

The Parthian kings used to sacrifice Persian horses to their divinities; this they considered the most costly offering they could make.

THE TARTAR HORSE.

In the widely extended plains of independent Tartary, there are various breeds of wild horses, which differ considerably in their external conformation. Those in general are ill-made, clumsy animals, but are said to possess great speed. They are hunted by the natives on account of their flesh, which is considered a great delicacy, more especially that of the foals, which is prized above that of all other food. The better formed animals are tamed and domesticated.

The largest of these wild coursers are a little larger than the smaller Russian horses, with large heads in proportion to the size of the body, and some of them have ears nearly as long as those of asses; their mane is very short and curled, their tails more or less covered with hair, but always shorter than that of a common horse, and certainly far from being a graceful ornament. They are for the most part of a mouse colour, and a few are of an ash-grey; their coat is very long, and extremely thick.

THE TOORKOMAN HORSE.

Turkistan is situate to the north of the Caspian Sea, or South Tartary, and has been long celebrated for a breed of horses possessing great physical powers: these are called Toorkomans. Some travellers affirm that they are greatly superior to the Persian race for enduring long-continued exertion.

In their form, however, they are by no means attractive, being too small in the barrel, with too long legs, with lank necks, and heads disproportionably large to the body. In size, they are from fifteen to sixteen hands high, and of excellent temper.

In that portion of central Asia peopled by the Tartars and Calmucks, are many herds, or tabunes of wild horses. These herds may be seen grazing together on the same plain, but never intermingle, nor do any individuals of the respective herds stray from them. Their forms are so different that horses of one herd can at once be distinguished from those of the other.

THE TURKISH HORSE.

The horses of Turkey are chiefly descendants from those of Arabia, Persia, and Barbary. Their foreheads are slender, and they carry their heads higher than the Arabian breed; their bodies are longer, and their crupper more elevated. They are possessed of a great deal of fire and spirit, extremely active, and peculiarly adapted to the Turkish mode of performing military evolutions. They are said to evince great affection for their masters.

SECTION III.—OF AFRICAN HORSES.

The horses of Africa are next to the Arabian in point of lineage and excellence, and are probably sprung from them. They generally possess a fine form and that mildness of disposition peculiar to the Eastern horses.

THE BARB.

The present horses of Morocco are a race nearly allied to the Arabian, and have been produced by a cross of those of Algiers, which are supposed to have had their origin in a south European breed, crossed with the Arabian, but somewhat larger than the latter in size, with fine heads and crests,

and in general well formed about the shoulder, straight backed, but droop considerably towards the haunches. They are exceedingly swift; and as none of them are geldings, they possess great spirit, and are naturally fiery in their dispositions.

The forehead of the Barb is generally long and slender, and his mane rather scanty; his ears are small, beautifully shaped, and so placed on the forehead as to give him great expression; his shoulders are tight, flat, and sloping backwards; withers fine, and standing high; loins short and straight; flanks and ribs round and full, without producing in him too large a belly; his haunches are strong and elastic; the croup is sometimes long to a fault; the tail is placed high; thighs well turned and rounded; legs clean and beautifully formed, with the hair thin, short, and silky; the tendons are detached from the bone, but the pasterns are frequently too long, and bending; the feet are rather small, but sound for the most part.

THE EGYPTIAN HORSE.

These horses are not at all to be compared with those of Persia and Arabia. They have neither the fire nor shape of these breeds, and are said to be thick in the breathing. These bad qualities, in all probability, arise from the humid atmosphere, and the low alluvial flats on which they are pastured.

THE NUBIAN AND DONGOLA HORSES.

Bruce says, "The Nubian horses are beautiful and symmetrical in their parts, of large size, great strength, and most active, agile, nervous, and elastic in their movements; capable of great endurance of fatigue, docility of temper and seeming attachment to man, beyond any other domestic animal; and if these faculties can promise anything for a stallion, the Nubian is, above all comparison, the most eligible in the world. They are all kept monstrously fat." They are black or white, but a vast proportion of the former to the latter; and a few bright bays, or inclining to sorrel.

The horses of Dongola, like those of the district of Nubia, are of large size, standing full sixteen hands high; but the length of the body, from the shoulders to the quarters, is considerably less, so that their form is quite opposed to that of the Arabian or English thoroughbred horses, which are longer than they are high by some inches. Their necks are long and slender, and their crests very fine; the withers sharp and high, producing a beautiful fore-hand. They are, however, faulty in the breast, being too narrow, and the quarters and flanks too flat, with the back somewhat bent. Bosman thinks them the most beautiful in the world. One of these horses was sold in Grand Cairo in 1816, for a sum equivalent to one thousand pounds sterling.

Several of these steeds have been imported into Europe, and some into England; but they did not turn out so well for breeding from, as was expected. This failure might possibly arise from not breeding them with the kind of animal to which their qualities are likely to be the most useful. It is very probable, that they might improve our cavalry horses by crossing them with three-part bred mares.

SECTION IV.—AMERICAN HORSES.

Horses are found in vast numbers in a wild state in the immense plains of South America, extending from the shores of La Plata to Patagonia. They are an emancipated race, emanating from those which were carried thither by the Spaniards, after their discovery of the new continent; and have increased with such astonishing rapidity, that

they are to be seen in troops of many thousands. Azara affirms, that they sometimes congregate in squadrons of not less than ten thousand individuals. They are invariably preceded by a leader, by whose movements they are governed; and all they do seems to be conducted in a systematic style.

These immense troops do not always feed together, but are dispersed into smaller herds; though when disturbed they congregate, and continue so until the cause of alarm has passed away. In form they bear a strong resemblance to the horses of Barbary and Turkey. Their colours are chestnut, bay, sorrel, or black; the latter, however, is not very common, chestnut being the prevailing colour, from which some authors suppose that this must have been the original colour of the horse; but we do not find it to be the prevailing colour of the Asiatic wild breeds, bay and dun being the most common amongst these.

When the Spaniards first entered Mexico, their horses were objects of the greatest astonishment to all the people of New Spain. At first they imagined the horse and his rider, like the centaur of the ancients, to be some monstrous animal of a terrible form; and supposing that their food was the same as that of man, brought flesh and bread to nourish them.

In South America mares are never ridden. An Englishman, who once attempted to ride a mare, was so hooted and pelted by the natives, that he had a narrow escape, and thought himself fortunate to get off without serious injury.

Wild horses are captured in South America by the native inhabitants of the plains, who are called Gauchos. They are taken by these men with much dexterity, with a halter called a lasso; which is thus described by Miers, in his Travels in Chili:—"The *lasso* is a missile weapon used by every native of the provinces of Chili. It is a very strong, plaited thong, of equal thickness, half an inch in diameter, and forty feet long, made of strips of green hide, plaited like a whip-thong, and rendered supple by grease. It has at one end an iron ring, about one inch and a half in diameter, through which the thong is passed and forms a running noose.

"The Guacho, or native Peon, is generally mounted on horseback when he uses the lasso. One end of the thong being affixed to his saddle-girth, the remainder he coils carefully in his left hand, leaving about twelve feet, belonging to the noose end, in a coil, half of which he holds in his right hand. He then swings this loose noose horizontally round his head, the weight of the iron ring at the end of the noose assisting in giving to it, by a continued circular motion, a sufficient force to project it the whole length of the line."

The Guacho takes a wild horse by first mounting an animal which has been accustomed to the sport, and gallops over the plain in the direction where the herd of wild horses are, and, circling round, by degrees gets near to one of them: and as soon as he has approached sufficiently near, "the lasso is thrown round the two hind legs, and as the Guacho rides round a little on one side, the jerk pulls the entangled horse's feet laterally, so as to throw him on his side, without endangering his knees or face. Before the horse can recover the shock, the rider dismounts, and snatching his cloak from his shoulders, wraps it round the prostrate animal's head. He then forces into his mouth one of the powerful bridles of the country, straps a saddle on his back, and bestriding him, removes the cloak; upon which the astonished horse springs on his legs, and endeavours by a thousand vain efforts to disencumber himself of his new master, who sits quite composedly on his back, and

by a discipline which never fails, reduces the horse to such complete obedience, that he is soon trained to lend his whole speed and strength to the capture of his companions."

There is a remarkable difference in the dispositions of the Asiatic and South American wild horses: those of the former country can never be properly tamed, unless taken and trained very young; if captured when adults, they frequently break out in fits of rage in after life, exhibiting every mark of natural wildness; whereas those of America can be brought to perfect obedience, and even rendered somewhat docile within a few weeks.

CHAPTER XIX.

THE ASS AND MULE.

THE ASS.

THIS animal belongs to the same natural genus as the horse, and has been under the dominion of man from the earliest ages of which we have any account. Indeed, he seems to have been sooner domesticated than the horse; for we find asses mentioned in the twelfth chapter of Genesis, as domesticated, 1920 years before the Christian era, although nothing is said of the horse.

In early times, the ass was not, as is now the case with us, considered a despicable animal; for we find that he was rode by the rich and noble, in preference to the horse, as will appear from the following instances, which we select from many that are recorded in the sacred writings:—When Abraham went to offer his son Isaac, he rode upon an ass; Joseph's brethren rode on asses, when they went down to Egypt to purchase corn; and we are told that when Moses left Jethro, his father-in-law, he took his wife and his sons, and set them upon asses, and returned to Egypt. In the enumeration of Job's property, which appears to have been very great, we find, that he had five hundred she-asses; and in his prosperity he is said to have had a thousand. It is probable that the preference given to she-asses arose from the circumstance, that as the ass can subsist on a scanty and coarse fare, the female would not only bear the riders and their goods through the desert, but also with her milk contribute to the support of her master and his followers.

The ass is by no means that stupid animal which he is generally supposed to be. He possesses all the senses in a very high degree, and his perceptions are clear and precise; and it may be affirmed that he has more solid good qualities than the horse. His disposition is naturally timid; hence the caution of his movements, which the thoughtless have improperly attributed to stupidity and obstinacy.

The ass is robust in constitution, and is liable to few diseases. His temperance is very great, being able to subsist on a scanty meal, of the coarsest herbage. He is more sure-footed than the horse, and superior to him in comparative strength. The Hebrew word *athor* is a term for the ass, from a root which signifies strong or firm; and he is less easily startled than the horse, a failing in this quadruped by which many lose their lives. Those very qualities which unthinking men ought to appreciate, have, on the contrary, the effect of bringing upon the unfortunate and patient animal an overwhelming load of unmerited hardships, barbarous chastisement, and contempt. His services are despised by the rich; and he is destined only to share the

labours of the poor and needy, whose hearts are hardened by poverty, with scarcely a kindly feeling to bestow on the humble and patient animal, who exerts all his energies in their service, and whose scanty meal is often so limited as to be hardly sufficient to sustain life, and on whom, when weak and debilitated, the abject wretch but too frequently wreaks his chagrined feelings. Is it then to be wondered at, that the poor animal should exhibit a character of stupidity and dulness ? It is chiefly in Britain that this valuable animal is treated with barbarity, and is a disgrace to our national character. Cruel treatment to any animal should be punished with the utmost severity by the legislature ; for although the Almighty has given man dominion over the beasts of the field, yet the All-wise could never intend man to tyrannize over the poor, helpless creatures which have feelings equal to his own, and gratitude far surpassing the lords of the creation, when properly treated.

In Eastern and mountainous countries, the ass is held in high estimation, and is treated with that care which he so justly merits. In mountain tracts his services are invaluable in transporting travellers and their baggage where the horse is of no use. In Aleppo there is a large and handsome breed, and in Persia also, where they sell for seventy-five ducats to one hundred crowns.

THE MULE.

It is a matter of surprise that mules are not more bred in this country, as their action is much more agreeable than that of the horse ; and they are also more hardy in their nature. It is not known when mules were first bred. The first mention of them in the sacred writings is 1740 years before the Christian era. In the book of Genesis it is said, " This was that same Anah that found mules in the wilderness, as he fed the asses of Zibeon his father." It is a disputed point whether he was the first breeder of them: Aristotle and Pliny are of opinion that he was. However this may be, mules do not appear to have become common in India until the reign of David, which was about 300 years after the death of Anah. We think it very improbable that wild mules were found, as hybrids are only known to be generated under the influence of domestication. Or, if the manner of engendering mules were known to the Israelites, that people probably desisted from breeding them in consequence of the law of God against their propagation; for it is said, "Ye shall keep my statutes. Thou shall not let thy cattle gender with diverse kinds." It is therefore likely that the mules which David and his nobles rode were imported from other countries, where they appear to have been common long before his reign. In Greece and Cappadocia they abounded in early times, for the latter country paid an annual tribute of mules to Persia.

The mule, like its progenitor, the ass, is much more useful as a beast of burden in mountainous countries than the horse, being very sure-footed. Their long and sweeping pace on a plain makes their motion extremely easy and agreeable to the rider. Fifty or sixty pounds sterling is no uncommon price for a fine mule in Spain.

CHAPTER XX.

LAWS RELATIVE TO THE TURF, &c.

HORSE-RACING.

To limit the excess of horse-races, the statute 13 George II., chapter 19, decrees that no plate or matches under the value of £50 shall be run for on pain of forfeiture of £200 by the owner of each horse so running, and of £100 by such persons as advertise the horse. And although the owners of horses may run them for a stake of £50 and upwards, at such places as are or have been used for horse-races; yet, if they run them upon the highway, or any other place than those prescribed by the statute, the bet is illegal, and the parties subject to the forfeitures accordingly.

There is, however, an exception in the statute in favour of Newmarket, and Black Hamilton, for any sum or stake less than £50.

Note.—Although matches or horse-races, made according to the above-cited provisions are legal, yet all bets or wagers above £10 on them are games within the statute of 9 Anne, chapter 14, and are consequently void.

But although the legislature has in many instances laid betting under particular restrictions, yet the practice is not restrained by the common law, unless it may be injurious to public economy. Consequently, all wagers which are not contrary to sound policy in the general interests of the community, or which are not made upon games, or are likely to disturb the public peace, or to encourage immorality, or probably affect the interests, characters, or feelings of others not parties to the wager, are legal, and may be recovered in a court of justice.

RECOGNISED LAWS OF RACING.

Horses take their ages from May-day, i. e. a horse foaled any time during the year 1846, will be considered a year old on the 1st of May, 1847.

Horses are measured by what is termed hands—four inches are a hand ; and jockey weight is fourteen pounds to a stone.

Catch weights are, that each party making a bet may appoint persons to ride without weighing.

Give and take plates are, fourteen hands to carry a stated weight, all above to carry extra weight, or under to be allowed the proportion of seven pounds to one inch above or below.

A whim plate consists of weight for age, and weight for inches.

A post match is, to insert the age of the horse in the articles, and to run any horse of that age without a previous declaration of what horse, until you bring him to the starting-post.

A handicap match is, A, B, and C are to put an equal sum each into a hat : C, who is considered the handicapper, makes a match for A and B, who, when they have perused it, put their hands into their pockets, and draw them out closed ; and on opening them, if both have money in their hands, the match is confirmed, but if neither have money it is no match. In both cases the handicapper draws all the money out of the hat ; but if one has money in his hand, and the other none, then it is no match, and he that has money in his hand is entitled to the deposit in the hat.

The horse whose head is first at the ending-post wins the race.

Riders must ride their horses to the weighing-post to be weighed, and he that dismounts his horse before reaching the weighing-place, or wants weight when weighed, is considered distanced.

If a rider fall from his horse, and the horse be rode in by any person who is of sufficient weight, he will take place the same as if it had not happened, provided he go back to the place where the rider fell.

Horses plates, or shoes not allowed in the weight.

No person is entitled to start a horse without producing a certificate of his age, if required, at the time appointed in the Articles, except when aged horses are included, and in that case a junior horse may be entered without a certificate, provided he carry the same weight as the aged.

For the best of the plate, where three heats are run, the horse is second that wins one.

For the best of the heats, the horse is second that beats the others twice out of three times, though he does not win a heat.

A confirmed bet cannot be departed from without mutual consent.

Either of the betters may demand stakes to be made, and on refusal declare the bet void.

If a party be absent on the day and time fixed for running, a public declaration of the bet may be made on the course, and a demand whether any person will make stakes for the absent party. If no person comes forward, the bet may be declared void.

Bets agreed to pay or receive in town, or at any other particular place, cannot be declared off on the course.

At Newmarket, if a match be made for a particular day in any meeting, and the parties agree to change the day, all bets must stand; but if run in a different meeting, the bets made before the alteration are void.

The person who lays the odds has a right to choose the horse or the field.

When a person has chosen his horse, the field is what starts against him; but there is no field unless one starts against him.

Bets made in pounds are paid in guineas.—If odds are laid without naming the horse before it is run, it must be determined as the bets were at the time of making it.

Bets made in running are not determined till the plate is won, if that heat be not mentioned at the time of betting.

Where a plate is won by two heats, the preference of the horses is determined by the places they are in in the second heat.

Horses running on the wrong side of the post, and not turning back, are distanced.

Horses drawn before the plate is won are distanced.

Horses are distanced if their riders cross or jostle.

A bet made after the heat is over, if the horse betted on does not start, is considered no bet.

When three horses have each won a heat, they only must start for a fourth, and the preference between them will be determined by it, there being no difference between them.

During a fourth heat, there is no distance. Bets determined, though the horses do not start, when the words "Absolutely," "Run or Pay," or "Pay or Play," are made use of in betting.

Example.—I bet, that the horse Godolphin "absolutely" wins the Queen's Plate at Newmarket.

Next meeting, I lose the bet although he does not start, and win although he goes over the course alone.

In running of heats, if it cannot be decided which is first, the heat goes for nothing, and all the horses may start again, except it be between two horses that had each won a heat.

Horses that forfeit are the beaten horses, where it is "Run or Pay."

Bets made on horses winning any number of plates that year, remain in force till the first day of May.

Money given to have a bet laid, is not returned, if not run.

Matches and bets are void on the decease of either party before determined.

RULES OF THE JOCKEY CLUB.

I. The ballots for members of the Jockey Club shall be in the news-rooms, Newmarket, on the Tuesday in the first spring meeting, and the Tuesday in the second October meeting, in each year.

II. That the candidates shall be proposed by members, and their names put up in the card-room, in the meetings preceding the ballots, viz., in the Craven and the first October meetings.

III. That nine members, at least, be present at the ballot, and that two black balls exclude.

IV. To meet annually at dinner the day preceding the Queen's birth-day.

V. That three members of the Jockey Club shall be appointed stewards, and to commence their office on the fourth of June, annually. One new steward to be appointed every year, on the third day of June, by the steward who quits on that day, subject to the approbation of the members of the Jockey Club then present.

VI. The first and second vacancy of the three stewards, now named, are to be settled by drawing lots; and ever afterwards the senior steward is to quit his office on the third of June, annually.

VII. All stakes shall be made in cash, bank bills, bank-post bills properly indorsed, bankers' notes payable to bearer, or bankers' notes payable to order, also properly indorsed; and not otherwise without the consent of the party or parties present concerned in the match, subscription, or sweepstakes, on whose account such stakes are made.

VIII. All stakes for matches, subscriptions, and sweepstakes shall be made before starting for the same; and in default thereof by any person, he shall forfeit in like manner as if he had not produced his colt, filly, horse, or mare to start, and shall have no claim to the stake or stakes of the match, subscription, or sweepstakes, should his colt, filly, horse, or mare have started, and come in first; and this to remain in full force, as an established agreement of the Jockey Club, unless such person have previously obtained the consent of the party or parties present, with whom he is engaged, to dispense with his making his stake, as aforesaid.

IX. In order to prevent frauds, notice shall be given, that if any person make any bet or bets, from signal or indication, after the race has been determined at the post, such person is not entitled to receive, or liable to pay the same; as such bet or bets is or are fraudulent, illegal, or totally void; and that if any servant belonging to a member of the society shall be found to have made, or to have been engaged in the making, any such bet or bets, he shall be dismissed his service, and no longer be employed by any member of this society.

X. When any match, or sweepstakes shall be made, and no particular weight specified, the horse, &c. to carry eight stone seven pounds each. And if any weight is given, the highest weight is, by this resolution, fixed at eight stone seven pounds.

XI. That no person shall be allowed to start any horse, mare, or gelding, for match, sweepstakes, or subscription, unless he shall have paid all former stakes and forfeits to the keeper of the match-book, by eight o'clock of the evening before starting.

XII. That the owners of horses, &c., engaged in matches, or sweepstakes, in which the forfeit shall amount to 100 guineas or upwards, shall be entitled to a deduction of ten per cent., if they declare their forfeits by half-an-hour before nine o'clock in the evening preceding running.

DECISIONS OF THE JOCKEY CLUB.

Any disputed matter, submitted to the consideration of the Jockey Club, must relate to horse-racing. The parties must agree upon a statement of the case in writing, request the opinion of the stewards of the Jockey Club thereon, and agree to abide by their decision ; and such agreement must be signed by the parties. If the dispute should not occur at Newmarket, the reference must come through, or with the sanction of, the stewards of the race where it happened.

Except the case arise at Newmarket, they decline giving any opinion where facts alone are in dispute ; such as a complaint of foul riding, &c. All such cases are most effectually investigated on the spot, whilst the matter is fresh in the memories of the witnesses, where their attendance is most easily procured, and their credibility best understood.

All communications must be addressed " To the Keeper of the Match-book, at Newmarket," and delivered free of postage.

By order of the Stewards.

Newmarket, 16*th May*, 1816.—Some disputes having arisen respecting the qualifications of horses to run for particular races, as well in regard to the time when the certificates should be produced, as to the person by whom the qualifications or disqualifications should be proved, the stewards of the Jockey Club, in the hope of introducing a uniformity of practice in this respect, and with a view to prevent disputes, declare it as their opinion, that when the qualification of any horse is objected to before starting, it is incumbent on the owner to produce a certificate, or other proper document, to the stewards, or clerk of the course, before the race is run, to prove the qualification of his horse ; and that if he shall start his horse without so doing, he must be considered as disqualified; and further, that their decisions on all cases referred to them on this point will be regulated accordingly.

By order of the Stewards.

TURF ABBREVIATIONS.

The following are the abbreviations used in designating the different courses at Newmarket, with their respective measurement; as also of the abbreviations used in describing races throughout the United Kingdom :—

		Miles.	Furls.	Yards.
B. C.	The Beacon Course	4	1	138
L. T M.	Last Three Miles of ditto	3	0	45
D. I.	From the Ditch in ditto	2	0	97
T. L. I.	From the Turn of the Lands in ditto	0	5	184
C. C.	Clermont Course	1	5	217
A. F.	Across the Flat	1	1	44

		Miles.	Furls.	Yards.
T. Y. C.	Two Year Old Course	0	5	136
Y. C.	Yearling Course	0	2	147
R. C.	Round Course	3	6	93
D. M.	Ditch Mile	0	7	184
A. M.	Abingdon Mile	0	7	211
R. M.	Rowley Mile	1	0	1
T. M. M.	Two Middle Miles of B. C.	1	7	115
D. C.	Duke's Course			
F. C.	Fox's Course			
An. M.	Ancaster Mile			
B. M.	Banbury's Mile			
C. S. C.	Craven Stakes Course			
M. D.	Mile and Distance, B. C.			

D. for Duke.
L. for Lord
H. or h. for Horse.
G. or g. for Gelding.
M. or m. for Mare.
C. or c. for Colt.
F. or f. for Filly.
b. for Bay.
bl. for Black.
br. for Brown.
gr. for Grey.
ch. for Chestnut.

ro. for Roan.
d. for Dun.
yr. for Year.
gs. for Guineas.
so. for Sovereign.
p. p. for Play or Pay.
h. ft. for Half Forfeit.
ft. for Forfeit.
pd. for Paid.
dr. for Drawn.
recd. for Received.
agt. for Against.

In riding, or *jockeying*, as it is termed, the race-horse in his course, not only judgment, experience, and spirit are required, but the jockey lies under a very critical kind of responsibility, involving the risk of his livelihood. There are many of them employed by the inferior black-leg species of sportsmen, and even yet, some of a higher class, who will not be convinced that a rider has acted honestly, and done his utmost, unless his horse be nearly dissected alive; a disgusting instance of which Mr. Lawrence has given from the mouth of a jockey of former days, and from his own evidence of the dreadful condition of the horse. The race was at Epsom, for a plate; the name of the horse, *Hussar*, by *Snap*; the jockey, William Barnes. It will not, indeed, be denied, that it is the nature of some horses to require frequent fillip with both whip and spur, to prevent them from falling asleep in their course, and some additions to these are probably required at the run in, for the purpose of eliciting their utmost exertions; such are styled, in the language of the turf, good whipped-horses—the *stout*, or lasting,—the game of which, rather than the speed, is their prominent qualification. But in the strongest probability, every drop of blood drawn from these is utterly unnecessary, as it is barbarous and contrary to the very idea of *sport*, in which even the horse himself ought to share. Many a race has been lost by a foul cut, or a brutal use of the spur, either by damping the spirit and enfeebling the nerve of the horse, or inducing a sullen disgust or depression. An example, much talked of at the time, and through which a vast sum of money was lost, occurred in the case of old Duke William, which was nearly home and winning: he received a foul cut with the whip in a very tender part, when he instantly hung back and lost the race.

Such horrible sights have been enjoyed within memory, even too lately to be pointed out, without making an open exhibition of our shame. Happily, however, a more mild and rational practice has for a considerable number of years past taken place. These scenes, the very antipodes to every idea of pleasure or sport, and so distressing to every humane and rational feeling, are not now, as formerly, of nearly invariable occurrence; although yet sensibility, reason, and

common sense are too often trifled with, and outraged in the case.

In *country* courses, (so styled in contradistinction to the grand theatre of racing—the head-quarters—NEWMARKET,) the chief concern, plate or purse, is always decided by *heats;* since, otherwise, the few matches or sweepstakes, decided by a single heat would not take up sufficient time to complete the amusement of the day. Sweepstakes of hunters, however, are, by general custom, run the best of three heats. It is a good old sporting custom, and fair on both sides, for the winner of a maiden plate, or sweepstakes, to be demandable after the race at a certain stipulated sum.

Newmarket Heath is the most spacious, and, indeed, the principal race-course in the world. It is situated at the west end of the town of Newmarket, in the counties of Cambridge and Suffolk, twelve miles east of Cambridge, and sixty miles nearly north of London. Races were in vogue in the eleventh century, and much frequented at Newmarket early in the reign of King Charles the First. The king's stables at Newmarket are the place of entrance, and the weighing-place is at the King's Stand.

The Curragh of Kildare is the great and fashionable race-course of Ireland, and may be considered the Newmarket of that country.

GREAT EQUESTRIAN FEATS OF THE RACE-HORSE.

The following are a few among the many extraordinary feats performed by race-horses at different periods :—

1752, March 30th.—Mr. Arthur Merrin's, bay gelding, Skew Ball, got by the Godolphin Barb, with a weight of eight stone seven pounds, beat Sir Ralph Gore's grey mare, Miss Sportly, got by Victorious, with a weight of nine stone, for three hundred guineas each, four miles on the

Curragh of Kildare. Skew Ball ran the four miles in seven minutes and fifty-one seconds.

1752, April 4th. — A little mare, belonging to Mr. Spedding, ran twenty times round the five-mile course at the Curragh of Kildare in twelve hours and a half, for one hundred guineas, half forfeit. She was allowed thirteen hours to do it in. And the next morning, for a bet of one hundred guineas, she ran the same ground to a minute. She was rode both days by a boy of Lord Antrim's.

This mare was bought by Mr. Spedding for twopence per pound weight.

1754, September 11th.—At Swiffham races, a mare of Mr. Suting's beat a horse of Mr. Deming's, in a sixty-mile match, for one hundred guineas. The winner performed the distance in four hours and twenty minutes.

1759, June 27th.—Jennison Shafto, Esq., performed a match against time, on Newmarket Heath; the conditions of which were, he was to ride fifty miles (having as many horses as he pleased) in two successive hours, which he accomplished with ten horses, in one hour and forty-nine seconds.

1791, December 24th.—Mr. Hall's horse, Quibbler, ran a match for one thousand guineas, twenty-three miles in one hour, round the flat at Newmarket, which he performed in fifty-seven minutes and ten seconds.

1791, October 6th.—At the meeting in the Curragh, Mr. Wild made bets to the amount of two thousand guineas, to ride against time, viz., one hundred and twenty-seven miles in nine hours. He started in a valley near the Curragh course, where two miles were measured in a circular direction; each time he encompassed the course, it was regularly marked. During the interval of changing horses, he refreshed himself with a mouthful of brandy and water, and was no more than six hours and twenty-one minutes in completing the one hundred and twenty-seven miles; of course, he had two hours and thirty-nine minutes to spare.

Mr. Wild had no more than ten horses, but they were all blood ones, and from the stud of Mr. Daly.

Whilst on horseback, without allowing anything for changing, he rode at the rate of twenty miles an hour for six hours. He was so little fatigued with this extraordinary performance, that he was at the Turf Clubhouse, in Kildare, the same evening.

1793, October 12th.—A mare carrying ten stone, and but fourteen hands high, the property of Mr. Macy, of Bruton Street, London, galloped on Sunbury Common twenty miles in fifty-six minutes and twenty-eight seconds.

1804.—The lady of the late distinguished Colonel Thornton appears to have been equally attached to the sports of the field with her husband; and the extraordinary contest which took place between Mrs. Thornton and Mr. Flint, in 1804, not only stands recorded on the annals of the turf as one of the most remarkable occurrences which ever took place in the sporting world, but also as a lasting monument of female intrepidity. It arose out of the following circumstances:—

A great intimacy subsisted between the families of Colonel Thornton and Mr. Flint, arising from their being brothers-in-law, as the ladies were sisters; so that Mr. Flint was a frequent visitor at Thornville Royal.

In the course of one of their equestrian excursions in Thornville park, Mr. Thornton, Mrs. Thornton. and Mr. Flint were conversing on the qualities of their respective favourite horses. With the spirit and keenness which generally exists on such occasions, they differed widely in their opinions, and an occasional spurt took place to try the mettle of their respective steeds. When Old Vingarillo under the skilful management of his fair rider, distanced his adversary at every attempt, which so nettled Mr. Flint, that he challenged the fair equestrian to ride against him on a future day. This challenge was immediately accepted by Colonel Thornton, on the part of his lady; and it was fixed by the respective parties, that the race should be run on the last day of the York August Meeting, 1804. This singular match was announced by the following notice:—

"A match for five hundred guineas, and one thousand guineas bye—four miles—between Colonel Thornton's Vingarillo, and Mr. Flint's br. h. Thornville, by Volunteer. Mrs. Thornton to ride her weight against Mr. Flint's."

On Saturday the 25th of August, this race was decided, and the following account of it appeared in the York Herald:—

"Never did we witness such an assemblage of people as was drawn together on the above occasion—one hundred thousand at least, Nearly ten times the number appeared on Knavesmire, than did on the day when Bay Malton ran, or when Eclipse went over the course, leaving the two best horses of the day a mile and a half behind. Indeed, expectation was raised to the highest pitch, from the novelty of the match. Thousands from every part of the country thronged to the ground.

"About four o'clock, Mrs. Thornton appeared on the ground, full of spirit, her horse led by Colonel Thornton, and followed by Mr. Baker and Mr. H. Bonyton; afterwards appeared Mr. Flint. They started a little past four o'clock. The lady took the lead for upwards of three miles, in most capital style. Her horse, however, had much the shorter stroke of the two. When within a mile of being home, Mr. Flint pushed forward and got the lead, which he

kept. Mrs. Thornton used every exertion; but finding it impossible to win the race, she drew up, in a sportsmanlike style, when within about two distances.

"At the commencement of the running, bets were five and six to four on the lady: in running the three first miles, seven to four, and two to one in her favour. Indeed, the oldest sportsman on the stand thought she must have won. In running the last mile the odds were in favour of Mr. Flint.

"Never, surely, did a woman ride in better style. It is difficult to say, whether her horsemanship, her dress, or her beauty, were most admired—the *tout ensemble* were *unique.*

"Mrs. Thornton's dress was a leopard-coloured body, with blue sleeves, the vest buff, and blue cap. Mr. Flint rode in white. The race was run in nine minutes and fifty-nine seconds.

"Thus ended the most interesting race ever ran upon Knavesmire. No words can express the disappointment felt at the defeat of Mrs. Thornton. The spirit she displayed, and the good humour with which she bore her loss, greatly diminished the joy of many of the winners. From the very superior style in which she performed her exercising gallop of four miles on Wednesday, betting was greatly in her favour; for the accident which happened, in consequence of her saddle-girths having slackened and the saddle turning round, was not attended with the slightest accident to her person, nor did it in the least damp her courage; while her horsemanship, and her close-seated riding astonished the beholders, and inspired a general confidence in her success.

"Not less than two hundred thousand pounds were pending upon Mrs. Thornton's match; perhaps more, if we include the bets in every part of the country; and there was no part, we believe, in which there was not some.

"It is but justice to observe, that if the lady had been better mounted, she could not have possibly failed of success. Indeed, she laboured under every possible disadvantage ; notwithstanding which, and the ungallant conduct of Mr. Flint, she flew along the course with an astonishing swiftness, conscious of her own superior skill; and would ultimately have outstripped her adversary, but for the accident which took place."

1822.—On the 16th of January, a match was decided between Mr. Aldridge and Mr. Hall, horse-dealers, made at the Tun, Jermyn Street, London, for five hundred pounds a side; the horses carried fourteen stone each. It took place between the third and fourth mile-stones, near Hampton. Mr. Hall's was a chestnut mare, of fifteen hands two inches high, and Mr. Aldridge's, a bay mare, a hand lower, but a very fast goer. The former had been backed to do a mile twenty seconds under three minutes, but bets were ultimately settled as above. She performed this distance in three minutes and two seconds ; although it is known that in her exercises she had done it in two minutes and thirty seconds. The rate of going that day was estimated at thirty-nine feet in a second, whilst the Flying Childers exceeded it by thirty-five per cent., viz., forty-nine feet in a second : all other swift horses went about forty-seven feet in the second.

ACCOUNT OF SOME OF THE MOST REMARKABLE HORSES.

THE DARLEY ARABIAN.

This horse was procured from the deserts of Arabia by Mr. Darley, a rich merchant, settled at Aleppo, and strict reliance may be placed upon the purity of his blood. From

this admirable horse is descended a race of the finest steeds which we have ever possessed. He was the sire of the fleetest racer that ever ran—the *Flying Childers*—whose descendants have, in general been of the best quality.

The Darley Arabian may therefore be considered the horse which turned the tide of fashion in favour of the Arabian breed, amongst the lovers of the turf in Great Britain.

THE GODOLPHIN BARB.

This extraordinary horse was of a brown bay, about fifteen hands high, with some white on the off-heel behind. He was long considered as a genuine Arabian, but we think his points were that of a Barb of the highest breed. It is quite certain that he was imported into France from Barbary, where it was suspected he had been stolen. So little was he valued in France, that he was actually employed in the drudgery of drawing a cart in Paris. He was brought to England by Mr. Coke, who gave him to Mr. Williams, of the St. James's Coffee-house, who afterwards presented him to the Earl of Godolphin.

Roxana, by Godolphin, produced Lath, one of the most beautiful horses, admitted by those most skilled in horseflesh, to be the best that had appeared at Newmarket for many years previous to his time, Childers only excepted. It is a remarkable fact, that there is hardly at this period a superior horse on the turf, without a cross of the Godolphin blood in him.

ECLIPSE.

This was a British-bred horse, and the finest proportioned animal which was ever known in this country. He was got by Marsk, a grandson through Squirt, of Bartlett's Childers, out of Spiletta, by Regulus, son of the Godolphin Bard, out of Mother Western, by a son of Snake, full brother to Williams's Squirrel; her dam Old Montague, grandson by Hautboy, out of the daughter of Brimmer, whose pedigree was not preserved. Eclipse was bred by the Duke of Cumberland, and foaled during the great eclipse of 1764, whence the name given him by the royal duke, at the sale of whose stud he was purchased a colt, for seventy-five guineas, by Mr. Wildman.

For what reason, we have never been able to learn, this celebrated horse was never raced until he was five years of age, at which time he was entered at Epsom for the maiden plate of fifty pounds. At first trial, such were the expectations of the knowing ones, that four to one was betted in his favour. At the second and winning heat of this race, all the five horses were close together at the three mile-post, when some of the jockeys used their whips. At this time Eclipse was going at an easy gallop, when he took alarm at the crack of the whip, and bounded off at his full speed; and although Oakley, his rider, was a man of powerful arm, he was not to be restrained, and in consequence distanced the whole of his competitors.

Before Eclipse ran for the king's plate at Winchester, in 1769, Mr. O'Kelly purchased the half-share of him for six hundred and fifty guineas. He afterwards became his sole proprietor, for an additional sum of one thousand guineas. It is said that one of the Bedford family asked O'Kelly how much he would take for Eclipse, when he replied, "By the mass, my lord, it is not all Bedford level that would purchase him." It is said, that about this period he asked from another person the modest sum of twenty-five thousand pounds down, and an annuity of five hundred pounds on his own life; and the privilege of sending to him annually six mares, which ot course was rejected. Mr. O'Kelly said he had cleared by this horse twenty-five thousand pounds, and his statement is supposed to be correct.

Eclipse was allowed to be the fleetest horse that ever ran in England, since the time of Childers. After winning king's plates, and other prizes, to a great extent, he was kept as a stallion, and gained to his owner, for forty mares, the great sum of thirty guineas each.

This fine horse seemed to combine all the qualities which constitute an excellent racer: his stoutness, form, and action were excellent. He had a vast stride, and certainly never horse threw his haunches below him with more vigour or effect; and his hind legs were so spread in his gallop, "that a wheelbarrow might have been driven between them;" his agility was great, and his speed extraordinary, but we cannot estimate it justly, as no horse of his day could be compared with him. The only contemporary which was supposed at all equal to him was Mr. Shaftoe's famous horse Goldfinder. He was never beaten, and was to have been matched against Eclipse, for the king's plates, on the following year, but he broke down at Newmarket in the October meeting.

Eclipse won eleven king's plates, in ten of which he carried twelve stone, and in the other ten. It was calculated, that within the course of twenty-three years, three hundred and forty-four winners, the progeny of this animal, produced to their owners the enormous sum of £158,071. 12s. sterling, exclusive of various prizes. The prevailing excellence of all the progeny of this horse was great speed, and they took up their feet in the gallop with wonderful activity. They were not, however, generally famed for stoutness; but, almost all of them were horses of fine temper, seldom or never betraying restifness.

The points of Eclipse to which I would particularly direct the attention of the breeder and sportsman are, the curve or setting on of his head, the shortness of his fore-quarter, the slant, extent, and substance of his shoulders, the length of his waist, and breadth of his loins; the extent of his quarters, and the length and substance of his thighs and fore-arms. Although he was a powerful horse, he was nevertheless thick in the wind; and in a sweat or hard exercise he was heard to blow at a considerable distance. This famous horse, the progenitor of our best racing stock, died on the 27th of February, 1789, at Canons, aged 26 years. His heart was taken out, and it weighed fourteen pounds.

FLYING CHILDERS.

This horse was well known, and sometimes called Devonshire Childers. He was the property of the Duke of Devonshire, and allowed by sportsmen to be the fleetest horse that ever was bred in the world. He started repeatedly at Newmarket against the best horses of his time, and never was beaten. He won in different prizes, to the amount of nearly twenty thousand pounds, and was afterwards reserved for breeding. The sire of Childers was the Darley Arabian, sent by a gentleman as a present to his brother in England. Childers was somewhat more than fifteen hands in height. He was the property of Leonard Childers, Esq., of Carr House, near Doncaster, and was sold, when young, to the Duke of Devonshire.

The dam of Childers was Betty Leedes, by Old Careless; his grandam Olden, sister to Leedes, by Leedes' Arabian; his great grandam by Sparker, out of the Old Morocco mare, Sparker's own dam. The affinities in blood of this pedigree are very close.

It is said that Childers was first used as a hunter, where he evinced high qualities, and was noted for being very headstrong, as well as vicious ; he had not, however, any restifness. It is supposed his racing career commenced at five or six, and he beat all competitors at whatever distance. He was never tried at running a single mile, but his speed must have been a mile in a minute. Carrying nine stone two pounds, he ran over the round course at Newmarket, which is three miles six furlongs and ninety-three yards, in six minutes and forty seconds. He also ran over the Beacon Course, consisting of four miles one furlong and one hundred and thirty-eight yards, in seven minutes and thirty seconds, covering at every bound a space of twenty-five feet. Childers died in the Duke of Devonshire's stud in 1741, aged 26 years.

SECTION II.

DISEASES OF CATTLE.

INTRODUCTION.

The chief attention of the veterinary art has been devoted to diseases of the horse. This has proceeded in a great measure from selfishness on the part of those practising it, being better paid for the treatment of horses than cattle. This department, has been hitherto almost entirely practised by farmers, and uneducated country blacksmiths. However, Mr. Dick, of Edinburgh, Professor of Veterinary Surgery to the Highland Society, has done much towards increasing our knowledge in this *most important* branch : indeed, none is more so, when we consider so much of the comfort, and health of the human race depends upon the quality of that food so much used in almost every country.

The following judicious remarks are made by Mr. Lawrence, in his excellent work :—" It should be considered that animals, living in a state of nature, regulated by the reason and experience of man, would be almost wholly exempt from disease ; that their appetites, like our own, may be held under a constant control ; that their diseases result purely from negligence or erroneous treatment of their owners. They are either too much exposed to the rigour and changes of

the weather, or they are gorged with food, denied a sufficient quantity, or supplied with such as is unwholesome. Here we learn the chief cause of their maladies. *Learn to prevent them*, instead of undertaking the tedious, unsuitable, and hopeless task of learning to cure them. Of all things let the proprietors of cattle renounce for ever the insane folly of offering premiums for curing *incurable* diseases, and the hope of providing medicines which, by a sort of miraculous operation, will enable men to continue in the habit of exposing their animals to the constant risk of such diseases. I have no infallible recipes to offer. On the contrary, I wish to impress my readers strongly with the idea, that all *infallible recipes are infallible nonsense.*"

We agree with Mr. White, that, " almost all the diseases of cattle arise either from exposure to wet and cold weather, from their food being of a bad quality, or deficient in quantity, or from being changed too suddenly from poor, unwholesome keep to richer pasture. It is necessary to observe also, that the animal is more liable to be injured by exposure to wet and cold, when previously enfeebled by bad keep, old age, or any other cause, and particularly when brought from milder and more sheltered situations. I have scarcely met with a disease that is not attributed, by those who have the care of cattle, to a chill; and under this impression the most stimulating medicines are usually employed: among which we generally find grains of paradise, ginger, long pepper, and mustard, in *large* doses. It unfortunately happens that the disorders arising from *a chill* are often of an *inflammatory nature*, and require a very different treatment. It must be granted, however, that cattle more frequently require stimulating medicines than horses; and that bleeding is not so frequently necessary, nor is it carried to such an extent in the former as in horses, particularly in milch-cows. Many of the medicines of which their *drinks* or *drenches* are composed are quite inert, some are nearly so, and others are very nasty."

Black cattle, sheep, and goats are included in a distinct order, called ruminants, or those animals which chew the cud. They have three kinds of teeth; and are destitute of the incisory or cutting teeth in the upper jaw, but are furnished with eight in the lower one, which are opposed to callosity in the upper gums. There are twelve grinders in each jaw, marked with two double crescents of enamel on their crowns, of which the convexity is outwards in the lower, and internal in the upper jaw. They have four stomachs, calculated for ruminating, or the faculty of masticating their food a second time, by bringing it back to the mouth after a deglutition, a faculty depending upon the structure of their stomachs. The three first stomachs are so disposed that the food may enter into either of them, the œsophagus terminating at the point of communication.

The first, and greatly the largest, is called the *paunch*, and occupies a considerable portion of the abdominal cavity. In this bag the food is macerated after very slight mastication; it is divided externally into two saccular portions. It is in this cavity that all those morbid concretions are formed, called hairy balls, &c. (See plate xii, fig. 1, *a*.) The second stomach, *b*, is called the honeycomb-bag, or king's hood, in consequence of its parietes being laminated like a honeycomb. It is much smaller than the first, and of a globular form. Its office is to seize, moisten, and compress the food into little pellets, which afterwards successively ascend to the mouth to be re-chewed. The animal remains at rest during this operation, which lasts until all the food first taken into the paunch has been submitted to it. The aliment thus re-masticated descends directly through the œsophagus into the third stomach. Now, as this latter tube communicates with three of the stomachs, the contents of the mouth may be sent into any of the three by the will of the animal. This stomach is the smallest of the three, and resembles a rolled-up hedgehog; its external coat has broad duplicatures, like the leaves of a book, and is called the manyplies. (See *c.*) There the food only remains a short time, and undergoes some change which fits it for being received into the fourth stomach, *d*, which is called the cailette, the sides of which are wrinkled, and which is the true organ of digestion, corresponding with the same organ in man and other mammiferous animals. The internal coating furnishes plentifully the ordinary gastric secretions for facilitating digestion. There is a beautiful provision in Nature, that while the young ruminants are still feeding on milk, this stomach is the largest of the whole. The paunch is only developed by receiving increased quantities of grass, which finally gives it an enormous volume. The intestinal canal is very long, though there are but few enlargements in the great intestines. The cæcum is likewise long, and tolerably smooth.

Of all animals the ruminants are the most useful to man. He can eat all parts of the animal; and it is from that he procures most of the flesh which constitutes his aliment.

The passage of the food through these various stomachs will be easily understood, by reference to fig. 1, plate xii. Its course is indicated by the direction of the probes *a*, *b*. The œsophagus communicates on one hand with the paunch, *d*, and on the other, with the cavities, *c*, *e*, *f*; and by the aid of a muscular fold formed by the walls of the second cavity, a passage may be formed which leads directly into the third stomach, *e*, without communicating with the second, *c*. It would therefore seem that the process of rumination is effected in the following manner :—The herbage when first swallowed in an unmasticated form passes into the paunch, *d*, where it accumulates, and undergoes a kind of preliminary mastication. When this paunch is filled, the animal desists from grazing, and the food is again regurgitated into the mouth to undergo that more complete mastication. It then passes into the second stomach, or king's hood, *c* ; and is there formed into a smooth, lubricated bolus, which being expelled into the œsophagus, is immediately seized by the spiral muscles surrounding that canal, and forced forward into the mouth. After undergoing a thorough trituration, the aliment is again swallowed, and then enters the third stomach, *e*. Here it is spread out over the extensive surface formed by the laminated walls of the manyplies, and is prepared for admission into the last or true stomach, *f*.

CHAPTER I.

DISEASES OF THE HEAD AND NECK OF NEAT CATTLE.

INFLAMMATION OF THE BRAIN.

Symptoms.—This fatal disease but seldom occurs in neat cattle. The animal afflicted with the disorder exhibits a frightful appearance ; he is unusually watchful, starts frequently, and groans loudly, as if labouring under severe and

sudden pain ; his respiration is slow, although he will sometimes make long inspirations, and has all the appearance of his breathing being entirely suspended. The animal becomes exceedingly restless, lying down, starting and rising up suddenly and frequently, with signs of delirium, and groans piteously. When this becomes great, the eyes have a red and furious appearance ; and at other times he manifests symptoms of stupefaction and listlessness, and shows evident signs of constant fear, avoiding every object which he approaches. Sometimes he is quite ungovernable, and never lies down to repose. If the disease has been allowed to gain an ascendency, or has not been abated by the ordinary treatment, then the animal sinks into a state of stupefaction and total want of energy or tact. In some cases, the animal urinates frequently, and it is of a high colour and very hot ; at other times it is paler than usual and much thinner, but in both cases he stales frequently.

When strong lethargic symptoms ensue, in consequence of sudden abatement of the frenzy and irritation, the pulse becomes feeble, and the strength quickly diminishes. This is strongly symptomatic of approaching dissolution. But on the other hand, if the fever and redness of the eyes gradually subside, without the pulse suddenly sinking, or great and quick debility ensuing, it is pretty certain that the animal is in the way of recovery.

When cattle have died of this complaint, their heads have been opened, and it has been found that the membranes have exhibited strong inflammatory symptoms, and in many cases in the substance itself, and even effusion of blood, where the animals have been greatly frenzied.

Causes.—Great heat, in exposed situations, where there is no shade to screen them from the mid-day sun, an excess of exercise, a sudden change from poor to rich pasture, and an inadequate supply of water; with other causes which induce inflammatory febrile complaints.

Remedy.—Whenever the symptoms which we have above described are noticed, prompt decisive measures must be adopted. Either the jugular vein or temporal artery should be opened, and at least three quarts of blood taken from an ordinary-sized animal; but when large, four quarts will be necessary. If the symptoms do not yield to this, bleeding must be repeated in three or four hours. When the animal labours under a very high degree of excitement, the more rapid the discharge of blood the better. Mr. Blane recommends a lancet to be struck into each jugular vein, and the animal let loose to run about until he drops from exhaustion. It has been found that this copious bleeding has saved animals in which the disease had gained an ascendency. When bleeding has been effected, and the animal has recovered from his faintness, a strong stimulating blister should be applied to the crown of the head, over the brain, and the sides of the neck should be rubbed with a mixture of cantharides and oil of turpentine, and every possible means adopted to induce external inflammation, so as to determine the blood from the head. The bowels should be kept open by means of an active purgative, according to the following recipe:—

Sulphate of soda .	1 pound,
Powdered caraway seeds	1 ounce,
Oatmeal gruel . .	1 quart.

CHOKING.

It is not unusual for cattle to have such a narrow gullet, or from attempting to swallow a large quantity of food not properly masticated, that they feel difficulty in swallowing the mouthful, and have even been choked from one or

other of these causes. This latter is most especially the case when cattle are fed upon turnips. There has been invented by Mr. Alexander, a farmer of Tweedale, a useful instrument, called a probang, for pushing down the food when it sticks in the throat, which can be had of all instrument-makers who deal in implements for the use of farmers. But where farmers or others do not possess this instrument, a substitute may be made in the following manner.

Three small canes of about five and a half or six feet long, are firmly bound together by waxed twine, rolled closely round its whole length. To the extremity of the canes is attached an elongated knob, made of shammy leather, stuffed with tow, and having a cup-shaped extremity. This knob must be firmly attached, by having long thongs proceeding from the edges of the leather, and firmly welted down by the enveloping twine. See plate x, fig. 19. The purpose of the cup-shaped extremity is to make certain of pushing forward the obstructing food, which but for this termination might slip past it. Great care must be taken that the knob is properly attached, as, should it come off, it must ever remain in the stomach, an undigestible incumbrance, which is certain to create disease. The cup-shaped termination should be formed of tin, with a number of holes in it to permit of the leather being sown to it. See plate x. fig. 20. Whalebone, if sufficiently long, is preferable to cane, as being much more elastic.

LOCKED-JAW.

Symptoms.—Tetanus or locked-jaw is at once distinguished by the animal being incapable of moving his jaw or of opening his mouth for the reception of food. It consists of a spasmodic contraction of the tendons by which the jaw is moved. If means cannot be devised to remove the seizure, the animal attacked must necessarily die for want of food.

Cause.—Locked-jaw is induced by wounds in a portion of the tendons of the muscles by which the jaw is moved, or by being exposed to sudden cold when very warm; it is also induced by viscid mucus, worms, or any irritative substances existing in the bowels.

Remedy.—From the nature of this complaint there can be little doubt but stimulating medicines will be found the most effectual, if medicine can at all relieve the spasm. The stomach and bowels should be freed from all irritating matter, as speedily as possible. It is in producing a new action that the use of medicine is at all effectual in this complaint. Fomentations, and the parts being stimulated by warm bathing, where the animal is weak or in low condition; but if strong and stout, cold bathing and opiate frictions, such as dashing cold water about his body, to produce a violent shock, is the most likely to prove efficacious.

If the disease has its origin in a punctured or lacerated tendon, it should be entirely divided; and the free use of antispasmodic medicines should be had recourse to. The following will be most likely to be of benefit:—

Camphor . . .	1½ ounce.
Tincture of cantharides	2 ounces.
Pure spirits of wine .	6 ounces.
Powdered opium .	½ ounce.

Let the powdered opium be first thoroughly rubbed down and fully incorporated with the spirits of wine, then add the camphor and cantharides, and when completely mixed and dissolved, let the mixture be applied with considerable friction.

If the above treatment does not remove the spasm, we know of no other remedy.

MURRAIN OR GARGLE.

This is a complaint usually generated in hot dry weather, and is always most prevalent in very warm and dry seasons. The disease is contagious, and by inducing inflammation, the throat swells considerably; and unless prompt and active treatment is had recourse to, the disease will speedily terminate fatally. This disease is common to Great Britain, and prevails over the entire continent of Europe. It is found to attack most frequently those animals which are in high condition, Its origin is always dependent on hot and dry weather, and is variable in its form according to the heat of the season, condition of the body, and the local situations. The murrain has carried off more cattle than any other malady with which we are acquainted; happily, however, the disease is not communicated from black cattle to any other kind.

Symptoms.—The first symptoms which manifest themselves in this complaint are shivering, accompanied by trembling of the limbs, and sinking of the flanks. The animal has a disinclination to eat, and when he does so, the neck is awkwardly stretched out, and his actions exhibit the utmost difficulty in swallowing his food, by shaking and hanging down his head and ears, which is generally accompanied by deafness, in consequence of the swelling of his throat pressing against the auditory apparatus. If the disease is attended by depression, it will be indicated by dulness and a languid appearance of the eyes; if accompanied by fever, the eyes are inflamed and sparkling, and move rapidly about in all directions. During the first three days of the disease, the fever never abates, and invariably rises and increases considerably towards evening; the pulse is unequal and irregular, with considerably quickened speed, accompanied with scouring of fœtid green-coloured dung; the breath is exceedingly offensive, and the skin emits a stinking effluvia, which taints the surrounding atmosphere.

About the fourth day great stupor and languor are exhibited, with great debility and unwillingness to move, and total loss of appetite, accompanied by a husky, hard cough, sickness, and throwing up of bile, shivering, a discharge of fœtid matter from the eyes and nostrils, great coldness of the body and limbs, with much heat in the head, horns, and breath, which is very offensive. When blood is taken, it is found to be very hot and frothy; the barbs and roof of the mouth become ulcerated; tubercles are formed beneath the fleshy membrane of the skin, which are quite perceptible to the touch, and eruptions become apparent all along the limbs, and about the bags in cows. The urine is frequently voided, and is of a high colour. Purging increases considerably, and seems to cause great pain; the bottom of the rectum becomes much inflamed and irritated by the excoriating effects of the acrid dung, while the milk ceases to be generated in the udder. The animal, generally lying down, groans a great deal, more especially as evening approaches. These symptoms gradually increase until the seventh day; in some instances, however, the turn or crisis of the disease does not take place until the ninth day.

Remedies.—Many remedies have been adopted in this complaint. Bleeding is one of the first things to be tried. Three pints may be safely taken at first, and if symptoms of inflammation continue, a pint more may be taken next day.

Tar-water has been given in the disease with considerable effect; two or three quarts daily will be found beneficial. The animal should be kept warm and in a house; the food to consist of pollard mashes, draff, warm gruel, and hay.

At this stage of the malady a puffing up of the hide, or abscesses filled with wind, and a thin acrid matter which evolves foul gas, make their appearance. This is an attempt of nature to throw off the disease. These may appear on any part of the body, and must be discharged by making an incision in the hide the full length of the puffy part. Into these must be inserted a small piece of damp sponge, to absorb all the putrid matter, and immediately afterwards the cavity must be filled with pledgets of tow dipped in the following ointment. The materials to be well rubbed up together.

Tar ointment . .	3 ounces,
Rose-water . .	1 ounce,
Tincture of myrrh .	1 ounce,
Nitre, finely powdered .	½ ounce.

This condition of the complaint is almost always accompanied by coldness of the body, and an almost total insensibility of the skin. The inside of the mouth presents an unusually soft, hanging appearance, with a discharge of a serous matter from it, as well as from the nostrils, which has a very fœtid smell; the eyes are dull and heavy; the breath and dung have a most offensive odour; all of which strongly indicate the approach of mortification. This must be arrested by the following medicine, which must be given every twelve hours, until a change of the above symptoms has taken place. The following recipe is the quantity for a single dose. When Peruvian bark cannot be obtained, or may be deemed too expensive, powdered willow bark may be substituted for it, but double the quantity will be required.

Peruvian bark . .	½ ounce,
Powdered camphor .	2 scruples,
Laudanum . . .	2 drachms,
Febrifuge antimonial powder	½ ounce.

When the symptoms of mortification are removed the danger will be past, and the animal will be seen to improve every day. But it will be necessary to give mild purgatives to cleanse the bowels: the following, once in two days, will be found beneficial:—

Sulphate of magnesia .	8 ounces,
Castor oil . . .	½ pint,
Gruel . . .	1 pint.

When evident signs of recovery are manifested, the animal may be turned out daily; but if the weather be cold, great caution will be necessary, and only two hours of midday exposure should be had recourse to in winter, when the days are fine. Too sudden transitions have produced consumption and megrims after this complaint.

The cow-houses should be well fumigated after diseased cattle have occupied them.

SNORES.

Symptoms.—The snores or snivels are known by a collection of thick, coagulated matter, inside the nostrils; and when the accumulation becomes great, it impedes the respiration through the nostrils, and produces a snivelling sound, as the air is expired and inspired. This complaint is sometimes mistaken for a disease in the throat, where it is imagined it causes obstruction. However, an inspection of the nostrils will readily show whether it is the snivels or not. The inflammation causes swelling in the nostrils, and it is not until it has ulcerated and suppuration has taken place, that the animal is relieved.

Cause.—The proximate cause of this complaint is not well ascertained ; but it is said to proceed from cold, producing inflammation in the mucous membrane.

Remedy.—To effect a speedy cure, every means should be adopted to facilitate suppuration; and fomentation or heating liniments will prove the most effectual. It has been found that oil of bays injected up the nostrils frequently has the effect of inducing speedy suppuration. Steam of hot water has also been successfully employed; or holding a thick cloth steeped in warm water to the nostrils will produce the same effect. Putting a warm mash of bran into a thick canvass bag, and attaching it to the nose, in the same manner as the nose-bag of a horse, has also been attended with speedy results. While the animal is labouring under this disease, he should be kept warm, and in a house, and supplied with nutritious food.

CHAPTER II.

DISEASES OF THE CHEST.

INFLAMMATION OF THE LUNGS.

Symptoms.—The premonitory symptoms of this complaint are loss of appetite, with depression and an appearance of anxiety ; rapidity of breathing, and consequent increased motion of the flanks, accompanied by a hard, dry, short cough, with a slimy discharge from the sides of the mouth. The pulse is quick and small, and difficult to be felt. The under surface of the eyelids is considerably inflamed, and sometimes approaching to a deep orange colour.

Milch-cows soon become dry, and the horns, ears, and legs are generally cold.

Cause.—This complaint is caused by sudden changes of temperature, or by removing the animals from close, sheltered situations, to exposed, high, and cold localities. Cattle feeding in low and damp situations, exposed to dense fogs and moist atmospheric changes are liable to be affected with inflammation of the lungs. Suddenly checking the perspiration by drinking a large quantity of cold water, when the animal is subjected to a high temperature, is another frequent cause. From this it will be manifest that sheltered sheds will be most beneficial in the feeding of cattle, either to retire into when exposed to the meridian of a summer sun, or during rains. It will be seen that in either case cattle will invariably avail themselves of shelter when it is within their reach. And, during variable seasons, moveable sheds, however temporary, would be found of much value in preventing diseases of this description.

Remedies.—As soon as the symptoms which we have described are noticed, recourse should be had to copious bleeding. From four to six quarts may be taken at the first ; and if the symptoms are not abated in from five to six hours, it may be repeated, to the extent of two to three quarts more, taking care, however, that the animal does not become too faint; and so soon as indications of this being the case appears, it will be time to desist. It is a mistake to bleed too profusely, as such weakness is often induced, that the animal never again rallies, and death follows.

When a sufficient quantity of blood has been taken, recourse should be had to the following medicine :—

Tartarized antimony .	½ ounce,
Saltpetre . . .	3 drachms,

dissolved in a quart of lintseed gruel, and the dose repeated every twelve hours, until the symptoms have disappeared.

Instances have frequently occurred where cattle died in twelve or fourteen hours after being attacked with inflammation of the lungs.

Some veterinarians recommend a large seton in the dewlap, and to be stimulated with an embrocation of ammonia, spirit of turpentine, and mustard ; but the connexion of the dewlap with the lungs, is too remote to act in the manner intended, namely, by counter-irritation.

INFLAMMATION OF THE STOMACH.

Symptoms. — The symptoms of inflammation of the stomach are not well marked ; loathing of food is the most prominent, together with foul breath, with a tightness of the hide about the shoulders.

Causes.—This is brought on by some acrid substance taken into the stomach while feeding, or from the animal feeding too greedily when removed from a poor to a rich pasture ; it sometimes proceeds from debility of the system, and the food in consequence remaining in the paunch until it has undergone a certain degree of fermentation, which produces heat, and inflammation, and obstructs the circulation, inducing great distention of the parts.

Remedies.—The medical treatment of this complaint must be something like that in inflammation of the lungs. Bleeding as a primary remedy must be resorted to, and followed by cooling aperient medicines, to carry off the indigestible matter lodged in the stomach. We do not know a better medicine than the following draught :—

Tartarized antimony .	½ ounce,
Cream of tartar . .	1 ounce ;

these to be dissolved in poppy-water, and one drachm of laudanum added, and the whole made into a drink, with a pint of lintseed gruel. Let it be repeated every twelve hours for two or three times.

Should the above not prove effectual, we know of nothing better than mashes of bran as food, and abstaining from giving grass.

INFLAMMATION OF THE LIVER.

Symptoms.—The diagnoses of this disease are difficult to define, but we may state generally, that it is accompanied by a difficulty of breathing, accompanied with fever, and a swelling about the region of the short ribs, and considerable distention about the uterus, in cows. A certain accompaniment of this disorder is, a bad constitution; and the animal never increases in flesh.

Causes.—One of the most common causes is fatness, and when they are so, being driven to a distance, particularly in hot weather. It may also proceed from blows or bruises, which by causing swelling in the contiguous parts, and by impeding the circulation, induces inflammation of the liver.

Remedies.—Bleeding to the extent of three quarts is the first remedy, and afterwards the following cooling aperient, to be given in the form of a draught, and repeated every day until the animal exhibits a more healthy condition :—

Columbo-root, bruised .	1 ounce,
Castile soap . .	1 ounce,
Nitre . . .	1½ ounce,
Salt of tartar . .	2 drachms.

If the animal is costive, half-a-pound of Epsom salts to be added to the above aperient.

FOG-SICKNESS, OR HOVEN.

Cause.—This unpleasant, and frequently troublesome malady is caused by cattle being removed from house or yard-feeding to rich pastures of meadow-grass or young clover, on which they feed so voraciously, that the stomach being overloaded with succulent food, fermentation takes place, a quantity of air is generated, which descending into the bowels, produces a general swelling of the belly. The cause is the animal taking in too great a quantity at once, without performing the necessary act of chewing the cud, by which the food is reduced into a more solid consistence, and prepared for its passage from the paunch into the other stomachs. It not unfrequently happens that the stomach is so distended with food and air, that it bursts, unless relief be timously afforded. It would seem that the great accumulation of air causes constriction of the gullet, so that it cannot escape upwards; and the same constriction produces spasmodic contraction in the openings of the different stomachs, by the unusual distention, and thus the air is checked in its progress downwards. It must be obvious that it is better to guard against the direness of this malady, than to remedy the evil. Care should be taken not to turn cattle into rich pastures when they are hungry; but if it is absolutely necessary that they should be turned out, they ought only to be allowed a limited time for feeding, and then return to their former situation, to chew the cud; and thus, by a little caution, the evil may be avoided. This should be repeated daily, until the animals are habituated to the change. The sudden gorging of the paunch, and the evolution of air, creates such a distention in it, that the function of chewing the cud is entirely prevented, and consequently it is seldom that Nature works its own cure, as is the case with other complaints.

Remedies.—Where there is very great swelling, the most speedy way of affording relief, is, to make an incision with a sharp penknife, a scalpel, or other instrument, beneath the short ribs, and insert a quill so as to allow the air to escape. When effectually got rid of, the external surface of the wound is protected by a piece of adhesive plaster. However, this remedy should never be resorted to except in cases of extreme necessity, as the operation can seldom be performed without wounding some of the important blood-vessels. It sometimes, also, happens, that whenever the instrument has penetrated the paunch, the pressure of the condensed air within, by rushing through the wound with extreme violence, produces a great rent, involving imminent danger to the life of the animal.

This desperate remedy is, however, not very often required, as medicines given internally, if promptly administered, will generally have the effect of relieving the animal. The medicines are various. The following has been found effectual :—

Gin or whisky . .	1 pint,
Water	1 pint.

It has been found that the following affords relief :—

Olive-oil . . .	¾ pint,
Hogs' lard, or butter melted	1 pint ;

to be mixed together, and administered by means of a horn, perforated at the smaller end. If no relief is visible in half-an-hour, the same quantity to be repeated. A pint of castor-oil is said to be as good a remedy as any other, and probably much better than the one above. The following recipe has been recommended, and has the advantage of being less costly :—

Saltpetre, dissolved in a gill of gin or whisky .	1 ounce,
Tartarized antimony .	3 drachms,
Milk of assafœtida .	½ pint,
Columbo-root, ground .	½ ounce,
Tar-water . . .	1 pint.

The columbo-root is gently boiled for half-an-hour in a pint of water, and after being strained through a cloth, the other ingredients are added to it.

Tar-water is prepared by pouring on two tablespoons-full of tar, a pint of boiling water ; and after stirring them well together, permitting the mixture to cool, and then pouring off the water.

But by far the most certain and expeditious mode of affording relief, is to have a tube constructed of wire, cylindrically twisted round a piece of cane, of about six feet in length, and covered with patent Mackintosh cloth. The cane is then withdrawn, and this leaves a lengthened tube ; the end of which should be rather round, and covered with shammy leather to prevent its injuring the animal. This, which will afford a free passage for the air, is put down the animal's throat until it reaches the paunch. The distance from the teeth of a full-sized ox to the bottom of the first stomach or paunch, is six feet, so that if the tube reaches five feet six, or five feet nine inches down, it is sure to have extended some inches into the stomach.

When the tube has been passed into the stomach, it may be permitted to remain a considerable time, as when it is pressed to one side of the throat, it does not prevent the free respiration of the animal. If the whole of the impure air, that is, the carbonized portion of it, does not escape through the tube, it may be effectually extracted by means of bellows fixed to the upper end of the tube, with a couple of valves, one at its middle, and the other at its muzzle, so disposed as to permit the air to pass in the direction from the stomach upwards. This tube is also a most effectual means of conveying stimulating medicines into the stomach, when the constriction of the opening would resist the ordinary action of swallowing.

There is some difficulty in performing this operation by those unaccustomed to cattle. The safest and surest mode is for an assistant to lay hold of one of the horns of the cow with one hand, and the part which divides the nostrils with the other, while the operator seizes the tongue with his left hand, and then forces the tube down her throat with the right.

After the air has been expelled, one of the following stimulating drinks must be administered, as the coating of the stomach will have been considerably distended:—

No. 1.

Spirit of nitrous æther .	2 ounces,
Oil of peppermint .	35 drops,
Powdered ginger . .	½ ounce,
Warm water . .	1 pint.

No. 2.

Powdered gentian .	1 ounce,
Cascarilla-bark . .	3 drachms,
Warm ale . . .	1 quart.

No. 3.

Powdered caraway-seeds	1 ounce,
Ginger . . .	3 drachms,
Laudanum . . .	50 drops,
Warm ale . . .	1 pint.

LOSS OF THE CUD.

Symptoms. — This is a distemper different from what we have above described in treating of fog-sickness. The symptoms are a dull, languid appearance, with a rough, unhealthy, staring coat, and tightness of the skin. The mouth and eyes generally exhibit a yellow appearance. A loss of appetite follows, and the animal desists from chewing the cud.

Causes.—A diseased condition of the liver is the proximate cause of this disease, but it is often facilitated by feeding on too rich pasture.

Remedy.—This disease should be attended to as promptly as possible after it has been noticed, otherwise it may terminate fatally before it can be eradicated. If the animal is costive, which is a general accompaniment of the complaint, let the following laxative be given as soon as possible :—

Barbadoes aloes	½ ounce,
Castile soap	6 drachms,
Cascarilla-bark	3 drachms,
Ground ginger	3 drachms,
Warm water	1 pint.

When the bowels are lax, the following should be administered, as a tonic, morning and evening, while the animal must be kept in a dry, warm situation.

Cascarilla-bark	3 drachms,
Powdered ginger	3 drachms,
Carbonate of soda	4 drachms,
Warm ale	1 pint.

This must be repeated until the scouring subsides.

CATARRH, OR COLD.

Symptoms.—Colds are two-fold, one is of a simple nature, and the other an epidemic, known by the name of influenza. Cold, raw, and wet weather frequently induce common colds, and neglect of these often ends in serious evils, and are too frequently the remote cause of consumption and death. The influenza cold will frequently attack a whole straw-yard of cattle, even in the course of a single night. The first symptoms are a dull and languid appearance, with watery eyes, which are partially closed, and a mucous discharge from the nostrils. These are commonly accompanied by cough and loss of appetite. If neglected, the animal gradually loses flesh, and becomes hide-bound, with a rough, staring coat. If speedy and proper remedies are not adopted, the lungs become tuberculated, with an enlargement of the mesentric glands, and hence the passage which conveys nutriment to the blood is obstructed, and atrophy, consumption, and death ensue.

Causes.—Many causes induce colds; the generality of these are too well known to require pointing out; but we may generally remark, that cold springs which follow mild winters are very conducive to colds.

Remedies.—Prompt attention to these complaints, as in most others, is most likely to effect a speedy cure, and even to prevent the more serious consequences attendant upon neglected colds.

In the earlier stages let the animal be placed in a warm situation, and supplied plentifully with warm fluid drinks of gruel, infusion of malt, or lintseed. But when the animal manifests chilness and shivering, with coldness of breath, warm stimulating draughts should be given, to restore the action of the stomach and intestines. The following draught should be given every eight hours:—

Powdered ginger	½ ounce,
Hartshorn	1 ounce,
Ale warmed	1 quart.

For drink, the water must always be given a little warmed. If feverish symptoms appear, an ounce of nitre, dissolved in a pint of warm water should be given. Should the fever not abate by this simple remedy, then it will be necessary to have recourse to bleeding, and two quarts may be taken; and should the symptoms of cough and fever still continue, another two quarts may be taken in sixteen or eighteen hours afterwards.

Sometimes the throat is affected, and the animal experiences a difficulty in swallowing. When this is the case, the following liniment should be applied to the throat:—

Oil of turpentine	1½ ounce,
Liquid ammonia, or hartshorn	½ ounce,
Rape-oil	1 ounce.

This is applied for the purpose of inducing counter-irritation.

When influenza has been allowed to get hold of the constitution, extreme weakness generally ensues. When this is the case, warm, nourishing, and stimulating diet should be given, together with some tonic medicine twice or thrice a-day.

Should the animal be costive, it will be necessary to administer the following laxative, which will be sufficient for two doses:—

Sulphate of soda	1 pound,
Powdered caraway-seeds	1 ounce,
Oatmeal gruel	1 quart.

In all cases of influenza the animal should be kept in a cow-house or shed, and a moderate quantity of grass or tares given daily, if they can be had at the season.

Whenever influenza appears to be epidemical, the animals should be immediately removed to a warm situation ; and if in the winter or cold spring weather, a house or shed should be chosen to remove them to, as it is easier to prevent than cure a disease : indeed the old adage, "It is easier to keep well than to make well," applies to most complaints incidental to man and animals.

COUGH.

Symptoms.—Cows after calving are frequently seized with a tickling, short, irritating cough, in consequence of being removed from a cow-house to some exposed situation. It may also proceed from sudden transitions from heat to cold. It is also occasioned by some extraneous matter adhering to the interior of the throat or trachæa.

Remedies. — Some recommend warmth, with a constant but moderate supply of succulent food. Colds may also be relieved by a pint of the following mixture, to be administered twice or thrice a-day :—

Pyroligneous acid .	2 quarts,
Treacle . . .	2 pounds,
Nitre . . .	2 ounces,
Warm water . .	4 pints.

Besides the above, the animal should be drenched twice or thrice every day with the following dose of medicine :—

Powdered aniseed .	2 ounces,
Vinegar of squills .	2 ounces,
Honey . .	3 ounces,
Ale warmed . .	2 quarts.

HOOSE.

Cause.—This complaint has a strong similarity to asthma in the human being, and arises from similar causes. It is

also owing to the animal accidentally swallowing some unwholesome substance in its food, which, resisting the powers of mastication, remains unaltered in the stomach, and occasions that peculiar affection called hoosing. Feathers and other indigestible substances taken into the stomach produce this disease. The sound emitted, like shortness of breath, while labouring under this complaint, is occasioned by the animal making vain attempts to dislodge the indigestible substance from its stomach.

Remedies.—With the complicated structure of the stomachs of cattle, the removal of any extraneous substance is very difficult. If the substance be a hard one, should it even pass into that stomach called the *manyfolds*, which is adapted for triturating the food, it is not likely that it will be expelled; and being lodged there, would be certain to produce inflammation, and lay the foundation of an incurable disease.

Hoosing may be produced by a sudden change of air or temperature, causing a glutinous phlegm to lodge in the lungs, which will impede the respiration, and consequently induce shortness of breath and irritation, and hoosing will follow; the animal will not be able to throw off the accumulation of matter which will be generated in the lungs, without a violent exertion. When such is supposed to be the case, and when it is known that the animal has indulged in too large a repast of clover, or other succulent herbage; let a pint of castor-oil be administered, which will generally afford relief; but if the cause be inflammation of the lungs, then bleeding will be found absolutely necessary, in the first instance, and two quarts may be taken; and six hours afterwards the following medicine should be repeated every six hours, until the disease is subdued:—

Tincture of foxglove .	50 drops,
Saltpetre . . .	1 ounce,
Tartarized antimony .	2½ drachms,
Powdered camphor .	½ drachm.

STAGGERS.

Symptoms.—This disease is indicated by a staggering, unequal walk, as if the animal were intoxicated, accompanied by a dull, heavy eye, and frequently redness inside the nostrils, with a hard, dry, and oppressive pulse, and great drowsiness.

Cause.—Like many other diseases which attack cattle, this is caused by the animal's being removed suddenly from poor to rich pastures, or feeding too plentifully after having been kept on a poor diet. In such cases, the starved animal gorges itself beyond the powers of the stomachs to digest properly, which deranges their functions, and causes irregularity in the evacuations, and an overflow of blood.

Remedies.—Bleeding is the first thing to be attended to, and from two to three quarts may be taken, and repeated if a change is not visible within twelve hours. The animal should be kept in a warm cow-house or shed, and the following medicine administered :—

Tartarized antimony .	½ ounce,
Cream of tartar . .	1 ounce,
Bitter apple . .	¾ ounce ;

the apple to be soaked two or three hours in a quart of boiling water, and strained while warm, and the other ingredients added. The above quantity to be given every twelve hours, while symptoms of the disease continue.

If staggers proceed from hydatides in the brain, or other cerebral cause, a cure is hopeless. Some have tried trepan-

ning the skull; but the remedy is too desperate to be thought of, and seldom or never proves successful.

PANTAISE, OR PANTERS.

Symptoms.—This is a complaint which generally attacks cattle during the dog-days, and is known by a heaving or panting of the flanks, accompanied by alternations of hot and cold, or intermittent fever, with trembling fits, and seems very analogous to ague in the human being.

Remedies.—Let the animal be immediately taken into a house, and stimulants administered every six or eight hours, according to the frequency of the fits; keeping the animal warm and clean at the same time. The following recipe has been found efficacious:—

Peruvian bark	½ ounce,
Febrifuge antimonial powder	½ ounce.
Spirit of hartshorn	¾ ounce,
Camphor, powdered	1 scruple,
Mithridate	½ ounce,
Warm beer, thickened with a little oatmeal	1 quart.

When water is given to the animal, it should be warmed, and its food should consist of hay. When all the symptoms have disappeared, let him be turned out for a short time during the middle of the day, until he is well enough to stand continual exposure in the open air.

JAUNDICE, OR YELLOWS.

Symptoms.—Cattle are very liable to this disease. Its seat is in the liver. It prevails in the spring and autumn. It is known by yellowness of the eyes and inside of the mouth; a dull and languid aspect, accompanied by debility and loss of appetite. It is uniformly attended by costiveness, and the animal seems to suffer pain.

Cause.—This is caused by an obstruction in the gall-duct, and may proceed from gall-stones being generated in the gall-bladder; but the seat is always in the liver, caused by a diseased condition of that organ.

Remedies.—If the disease is attacked when first noticed, it may be checked by the following laxative, given in a warm state:—

Barbadoes aloes . .	½ ounce,
Castile soap . .	6 drachms,
Ginger . . .	3 drachms,
Cascarilla-bark . .	2 drachms,
Warm water . .	1 pint.

The following has also been found a good remedy:—

Columbo-root . .	½ ounce,
Nitre in powder . .	½ ounce,
Prepared kali . .	½ ounce,
Tartarized antimony .	2 drachms,
Venice turpentine .	½ ounce.

After this, warm mashes of bran or ordinary draff should be given frequently as diet.

Should the yellow appearance above described continue after an interval of three days, then the above dose may be repeated. However, during the whole time the following drench must be administered, morning and evening:—

Castile soap . . .	½ ounce,
Venice turpentine .	½ ounce,
Ginger powdered .	3 drachms,
Powdered gentian-root .	1 ounce.

The soap and turpentine should be well rubbed together in a mortar, until they are properly mixed; let the ginger then be beat up with them, and a pint of water added and properly incorporated.

When the disease continues for some considerable time

it may be inferred that the liver is in a very disordered condition, and in that case a cure is hopeless. Mercurial remedies have been recommended and tried with good results.

POISONS.

Symptoms.—Great distension of the intestines and violent pain are the symptoms attendant upon cattle which have eaten poisonous or highly narcotic vegetables.

In this country there are no poisonous animals whose bite will prove fatal to horned cattle. From the bite of the viper, swelling and pain in the spot bitten may take place, but these will generally disappear after suppuration. However, it sometimes happens that cattle when hungry will feed upon plants which are poisonous in their nature, such as the leaves of digitalis, or foxglove, poppies, and even lettuce, which, from their narcotic properties, induce sleep, and when taken in too large quantities produce a state resembling apoplexy, and terminate in death. Besides the plants above mentioned, we may also state that, henbane, deadly-nightshade, woody-nightshade, laurel, and stramoneum, have highly narcotic properties.

Remedies.—Vinegar counteracts the effects of narcotics. A pint may be given to a cow or ox, which will generally be found a sufficient dose, especially if heated before being administered.

The following recipe has also been found an effectual remedy :—

Nitre in powder . .	½ ounce,
Gum fœtida, powdered .	¾ ounce,
Prepared kali . .	2 drachms,
Mithridate . . .	1 ounce,
Tartarized antimony .	2 drachms ;

to be given in a pint of gruel.

It is a common practice with many persons to boil turnips and potatoes for cattle in a copper boiler, and when not properly cleansed afterwards, the acid in the water extracted from these vegetables, rusts the vessel, producing what is called verdigrise. Careless servants will sometimes not be at the trouble to remove this before boiling a fresh meal. Very bad consequences have followed this, as verdigrise acts as a strong poison.

The best thing for counteracting the effects of this poison, is to administer a weak solution of salt of tartar: viz. half-an-ounce to a quart of water.

CHAPTER III.

DISEASES OF THE ABDOMEN.

INFLAMMATION OF THE BOWELS.

Symptoms.—The chief symptom by which this disease is characterized, is great restlessness, accompanied by a violent, griping pain, and the animal will frequently turn his head towards his belly, and even endeavour to strike it with his hind foot. The pulse is rapid, and the breathing oppressed; and it is not unusual for the animal, while suffering severe pain, to break out into profuse perspiration. The most prompt measures must be adopted, or the disease will end in mortification and death.

Cause.—This malady may proceed from drinking cold water too copiously after being overheated by being overdriven, or being exposed to the noon-day summer sun, or placed in a sheltered locality where there is no free circulation of air. It also has its origin in costiveness.

Remedies.—The treatment to be adopted will depend upon the condition and extent of the evil. If the pulse is unusually quick, the eyelids unnaturally red, and the breathing most oppressive and hard, bleeding must first be attended to, and from four to six quarts taken, according to the vigour of the animal. If the bowels are not lax, then the following drench must be given :—

Sulphate of magnesia .	8 ounces,
Castor-oil . . .	1 pint,
Gruel . . .	3 gills,
Salt of tartar . .	3 drachms.

The salts should first be dissolved in the warm gruel, and the oil and salt of tartar added afterwards. The use of the salt of tartar is to make the oil incorporate with the gruel.

If this drink does not operate quickly, clysters should be given to facilitate the evacuation. They should consist of

Hogs' lard . . .	$\frac{1}{4}$ pound,
Gruel, warm . .	1 pint.

If there is no redness in the under surface of the eyelid, the complaint will not be so severe as to render copious bleeding necessary ; and particularly if the pulse should not be very quick and hard, and the bowels open. In such circumstances, I would not recommend more than two quarts to be taken, which may be repeated in five or six hours if the animal exhibits no signs of amendment. With a moderate attack, when the animal is in low condition, anodyne drinks may be substituted for bleeding. The following will be a sufficient dose, which should be repeated every six or eight hours, according to circumstances :—

Spirit of nitrous æther .	2 ounces,
Laudanum . .	½ ounce,
Purified nitre . .	¼ ounce,
Water . . .	1 pint.

If the complaint proceeds from costiveness, after having been fed upon dry fodder, (which will be manifested by a difficulty in dunging, and what he voids will be more solid than usual, differing in colour and offensive in smell,) then the laxative drink above recommended must be given. But in case the pulse is rapid and hard, bleeding must be instantly attended to, especially if accompanied by redness of the eyes, and oppressed and hard breathing.

INFLAMMATION OF THE KIDNEYS.

Symptoms.—This complaint may be distinguished by a quick pulse, loss of appetite, and a frequent inclination to stale ; and only a small quantity of urine being voided at a time, of a dark red colour, and accompanied by much suffering to the animal, indicated by every motion expressive of pain. There is also much stiffness in the hind-quarters in walking. This complaint requires immediate attention, otherwise it may terminate fatally. It differs from the malady called red-water.

Causes.—External injuries, or irritating substances taken into the stomach, and passing through the kidneys with the urine, will produce inflammation. It may also be induced by the injudicious administration of strong diuretic medicines.

Remedies.—Bleeding must first be resorted to, and from two to three quarts taken at first. Afterwards give a pint of castor-oil, in a pint of warm lintseed-tea, with a quarter of an ounce of salt of tartar to make them incorporate.

Should the animal be costive, a clyster of a quart of

gruel, with two ounces of common salt, and two ounces of rape oil should be given.

It will also be necessary to rub the loins, over the region of the kidneys, with the following liniment, to promote counter-irritation, and afterwards warm clothing should be put over the seat of the disease :—

Mustard . . .	4 ounces,
Spirit of turpentine .	2 ounces,
Hartshorn . . .	2 ounces.

If in the course of three or four hours after the application of the above liniment there is no cessation of the constant urinating straining, let the following clyster be administered :—

Laudanum . . .	1½ ounce,
Thin gruel . .	1 quart.

Let the following be given as a drink :—

Lintseed-meal . .	1 pound,
Purified nitre . .	2 ounces,
Boiling water . .	2 gallons.

One gallon to be given as a draught at a time.

INFLAMMATION OF THE BLADDER.

Symptoms.—While cows are in calf, especially during the latter portion of their gestation, they have sometimes a frequent desire to void urine. This proceeds from an irritable condition in the sphincter of the bladder.

Cause.—This in most instances is caused by a continued pressure upon the region of the bladder.

Remedies.—The first thing is to let off the urine by means of a catheter, and then to administer the drink above recommended for inflammation of the kidneys. If a catheter is not at hand, the finger introduced as far as the neck of the bladder will permit the urine to flow freely.

INFLAMMATION OF THE WOMB.

A loss of appetite, accompanied by a rapid pulse, a languid action, and loss of milk are the ordinary symptoms of this complaint. As the disease progresses, inflammation of the bladder, with a fœtid discharge from the vagina takes place, accompanied by a constant endeavour to void urine, which comes off in small quantities at a time. Sometimes a complete retention of the urine takes place, which can only be relieved by the introduction of the catheter. The cow frequently becomes so weak as hardly to be able to stand, and moves about with much difficulty.

Causes.—This complaint often has its origin in keeping the cow on two full and rich a diet during the latter period of gestation; or from great violence being used in an operator assisting her to calve.

Cure.—When retention of urine takes place, the catheter must be used as above mentioned. And when the neck or sphincter of the bladder is inflamed, bleeding must first be had recourse to, and afterwards the following laxative drink must be given :—

Castor-oil . . .	8 ounces,
Epsom salts . .	6 ounces,
Lintseed-meal . .	4 ounces;

the whole to be dissolved in half-a-gallon of thin, warm gruel. Clysters of warm gruel and oil will be found beneficial, and then give the following anodyne :—

Camphor . . .	2 drachms,
Laudanum . . .	½ ounce,
Spirit of nitrous æther .	1 ounce,
Lintseed-meal . .	2 ounces;

dissolved in a quart of gruel. If the animal does not exhibit symptoms of relief in ten or twelve hours, the same

dose may be repeated. And if the straining and painful symptoms of frequent urinating continue, then an anodyne clyster may be given, composed of the following:—

Laudanum . . .	2 ounces,
Thin gruel . . .	1 quart.

RED-WATER.

Symptoms.—At the commencement, this complaint is manifested by frequent, but unavailing attempts to emit urine; but when the disease has acquired a more advanced condition, the discharge is in large quantities, intermingled with a considerable portion of blood; and hence its name. When the disease is neglected, the urine assumes a darker hue, and in time looks like foul coffee, and now he loses strength rapidly, and sinks into a lethargic condition; and unless speedy remedies are had recourse to, the animal will seldom exist under the complaint for more than ten or twelve days. Great pain is felt in the urinary passage, and the animal generally retires from the rest of the herd, and extends its tail, raising up its back in an arcuated form.

In the earliest stages, sunk eyes, restlessness, and want of appetite, with hot and dry nose, and a staring coat are the ordinary concomitants of this disease.

Red-water is usually accompanied with considerable costiveness; and although this may not be the case at first, it generally shows itself in the more advanced stages of the complaint. Dry feeding is certain to induce costiveness in this malady, and more especially if strong astringents are given; and in this case such a degree of constipation may be induced, that the animal will die in consequence, as no medicine will give relief. So prone to costiveness are animals labouring under this complaint, that it will take place even when feeding on grass. Relief may sometimes be given by drawing off the dung with the hand. This complaint differs in a material degree from inflammation of the kidneys, as the urine is not voided in small quantities, as in that disorder.

Causes.—Various are the causes to which this malady is attributed, the principal are sudden and severe changes of temperature, as well as removing from a poor to a rich pasturage, want of water, or drinking that which has become in a half-putrid and stagnant condition. Spring is the season when it prevails most. Bulls, oxen, and cows are all liable to be affected with this complaint, which is very common in Britain. Young cattle are more liable to it than adults.

It has been said this disease has frequently been induced by cattle feeding on bramble, furze, and black-thorn, as well as on coarse grasses and rushes.

Remedies.—At the commencement, laxatives have been generally found efficacious. The following formula has been recommended as the best :—

Epsom salts . .	4 ounces,
Purified nitre . .	1 ounce,
Castor-oil . . .	4 ounces,
Thin gruel . .	1 quart.

The following has also been recommended :—

Gum assafœtida, in powder	¾ ounce,
Madder . . .	1 ounce,
Prepared kali . .	3 drachms,
Tartarized antimony .	½ ounce,
Gamboge, powdered .	1 drachm.

These to be properly dissolved in half-a-gallon of linseed-tea, made from a quarter of a pound of the meal.

Should neither of the above recipes prove effectual, let the following be given :—

Alum, finely powdered .	1 ounce,
Terra japonica . .	1 ounce,
Oil of turpentine . .	2 ounces,
Lintseed-meal . .	2 ounces ;

the whole dissolved in half-a-gallon of warm water.

The following has been recommended by some practitioners as a substitute for the above :—

Epsom-salts . .	4 ounces,
Castor-oil . . .	4 ounces,
Cream of tartar . .	1 ounce ;

to be dissolved in a quart of warm, thin gruel.

After the above laxatives the following stimulant has been recommended :—

Tincture of cantharides	2 ounces,
Roche-alum . .	2 ounces.

If the animal shows symptoms of staling frequently, and voiding only a small quantity at a time, and accompanied with pain, lintseed-tea, or a decoction of marsh-mallows should be frequently given, which generally affords relief.

If the animal is much debilitated, and does not feed well, the following stomachic should be administered :—

Peruvian-bark . .	½ ounce,
Gentian-root, powdered .	1 ounce,
Gum-arabic . .	½ ounce,
Carbonate of soda . .	½ ounce.

The whole to be dissolved in a quart of lintseed-gruel, made from two ounces of the meal.

BLACK-WATER.

Symptoms.—In this complaint the urine is of such a dark colour as to be nearly black. The complaint is not well understood, and probably may be only a variety of red-water. Some authors have supposed it to proceed from incipient mortification of the kidneys; and what seems to favour this opinion is, that the urine has invariably a most disagreeable and offensive smell, not unlike the effluvia proceeding from rotten cabbage, or other vegetable substances.

Cause.—It has been observed, that cattle which feed upon a poor, cold, wet soil are liable to this affection. Hitherto no other cause has been given.

Remedies.—Bleeding should first be resorted to, and two to three quarts may be taken at first, and afterwards the following medicine to be given :—

Peruvian bark . .	1 ounce,
Iron filings . . .	1 ounce,
Purified nitre . .	1½ ounce,
Laudanum . . .	½ ounce ;

with two ounces of lintseed-meal dissolved in a quart o warm water.

This disease too frequently ends fatally. When cows have this malady, bleeding must not be resorted to.

The following recipe has generally proved effectual in removing the complaint, and even by one application of it:—

Prepared kali . .	3 drachms,
Tartarized antimony .	3 drachms,
Gamboge . . .	1 drachm,
Gum-fœtida . .	½ ounce.

To be given in a quart of lintseed-gruel; and if it does not remove the complaint within two days, a second dose may be given. If the urine still exhibits a bloody appearance, let the following mixture be given every day, until a cure is effected :—

Dried willow-bark, powdered	1 ounce,
Balsam of capivi .	1 ounce,
Laudanum . . .	½ ounce,
Epsom salts . .	4 ounces.

The above should be given in about half-a-gallon of lintseed-tea.

INFLAMMATION OF THE BOWELS.

Symptoms.—Great restlessness, and a griping pain, which causes the animal to lie down, turning his head often towards his belly with anxious looks, and frequently attempting to strike it with his hind foot, are the chief symptoms of this malady. These are invariably accompanied by a quick pulse, and an unequal and disturbed breathing, inducing copious perspiration. If this complaint is not quickly checked by the ordinary treatment, it is sure to end in mortification and death.

Causes.—Costiveness, drinking cold water in large quantities during extreme heat, or over-driving, are the ordinary causes which induce this complaint.

Remedies.—This disease requires a variety of treatment according to the state of the malady, and these must be well considered, before the cure is attempted. When the pulse is unusually rapid, accompanied with suffused redness of the eyelid, and the breathing hard and irregular, it will be necessary to bleed the animal immediately, to the extent of from four to five quarts, and even six if the animal be large. Let the following alterative be given soon afterwards :—

Sulphate of magnesia .	8 ounces,
Castor-oil . . .	1 pint,
Gruel or lintseed-tea .	1 quart,
Carbonate of soda .	¼ ounce.

Should the above not operate in the course of three or four hours, it may be facilitated by a clyster, consisting of

Olive-oil . . .	1 gill,
Warm gruel. . .	1 pint.

When the disorder is unattended with redness of the under surface of the eyelid, or paler than usual, with a nearly natural condition of the pulse, with loose bowels, the blood taken should not exceed two quarts. And if the animal is in a low condition, with a weak pulse, bleeding will be unnecessary, and in such a case, the following anodyne will usually have the effect of relieving him.

Laudanum . . .	½ ounce,
Spirit of nitrous æther .	2 ounces,
Lintseed-tea . .	1 quart.

If the complaint is caused by costiveness, which can be determined by the dung being solid, with an offensive odour, and voided with difficulty, the laxative medicine above recommended must be had recourse to, as well as clysters, and this must be repeated until relief is afforded; and bleeding may likewise be necessary.

GRIPES.

Symptoms.—Young cattle are extremely liable to colic, which is manifested by great restlessness, frequently lying down and rising again, groaning, and striking against the belly with the hind feet, and sometimes even with the horns. It is seldom that any change of the pulse takes place. The body is, however, liable to swell, particularly on the left side ; and unless remedies are speedily applied, the pain generally increases greatly, accompanied with inflammation, and a quick, hard, and unequal pulse, while the feet, ears, and horns are very cold. When the last symptoms appear, they are generally the forerunners of death.

Causes.—Retention of food in the third stomach, with costiveness, will produce gripes. Even when the bowels are lax, or in a natural condition, cattle have been known to be griped. Dry food, such as grain and hay, will produce it in

cows. It also occurs from the animal taking large meals of rank grass, and drinking cold water when much heated: in this case, the disease is sudden in its attack; but when caused by costiveness, its effects are more gradual, but more difficult to remove.

Remedies.—When costiveness is the cause of this disease, recourse must be had to purgatives, taken in combination with aromatics, or stimulants. The following prescription generally proves effectual:—

Barbadoes aloes	¾ ounce,
Powdered ginger	½ ounce,
Spirit of turpentine	1 ounce,
Lintseed-oil	8 ounces,
Carbonate of potass	3 drachms,
Water	1 quart.

In country situations where all of the above medicines cannot be readily procured, the following formula may be used as a substitute:—

Common salt	8 ounces,
Rape-oil, or melted hogs' lard	8 ounces,
Mustard	1 ounce,
Rum, or whisky	2 ounces.

When the animal is in high condition, with redness on the inner surface of the eyelid, bleeding must be resorted to. But when accompanied with looseness of the bowels, or in an ordinary condition and a tendency to weakness, blood must not be taken, and the following carminative medicine given:—

Spirit of turpentine	1 ounce,
Laudanum	6 drachms,
Spirit of nitrous æther	2 ounces,
Lintseed-tea	1½ pint.

When it is necessary to have recourse to a purgative mixture, its operation will be facilitated by clysters, for which we have given recipes at page 496.

If colic is induced from the animal gorging itself with dry and hard grain or hay, great caution must be exercised in feeding for some days after the complaint has been removed. At the same time it will be proper to give the animal the following stomachic, as a restorative, once or twice during the twenty-four hours :—

Powdered ginger . .	½ ounce,
Powdered gentian . .	1 ounce,
Carbonate of ammonia .	2 drachms,
Infusion of camomile-flowers	1 pint,
Peruvian bark . .	¼ ounce,
Warm gruel . .	1 pint.

If, however, costiveness is the proximate cause of the colic, an alterative must be the remedy administered, and the purgative above recommended must be given. Sometimes a change from dry to green food will produce the desired effect without having recourse to medicine. Salt mixed with the food has been known to relieve the pain, and also to restore a healthy condition in the animal. Or, if he refuse the dry salt, a solution of four ounces, daily, in a quart of water will give a desire to drink, which, if water is given plentifully, will be of much service in obviating the complaint.

DIARRHŒA, OR LOOSENESS.

Symptoms.—This complaint is manifested by general weakness and loss of flesh, increasing paleness of the eyes, frequent discharge of dung mixed with the slimy substance which lines the intestines, which has a most fœtid smell, accompanied by inflammatory fever and griping pains, with irregular pulsation

Causes.—Diarrhœa is induced by a variety of causes; the most frequent, however, is when cattle are either turned out from a straw-yard or poor pasture to a luxuriant field of grass—which is always preferred by cattle—where they gorge themselves to such an extent, that they bring on fog-sickness, and inflammation, as well as this complaint

Remedies.—If the malady is taken at first, it has been found that putting the animal into a house, and feeding it upon dry fodder or grain will effect a cure. But should it not do so, it will be necessary to have recourse to bleeding the animal to the extent of two or three quarts; and its food should consist of malt-mashes, lintseed-tea, or gruel made of flour or oatmeal. If the scouring is attended with pain, a quarter of an ounce of laudanum may be given in the food, or in a drink of a pint of gruel.

In cases where the discharge is very great, bleeding must not be attempted; but half a-pint of castor-oil may be given in a drink. If in five or six hours there is no abatement of the disease, let the following medicine be given every six hours, until the scouring is less violent, and the dung resumes its natural colour:

Peruvian bark, powdered	½ ounce,
Camphor, finely powdered	1 scruple,
Prepared chalk . .	1½ ounce,
Laudanum . . .	¼ ounce;

to be administered in a quart of gruel, made of flour.

In diarrhœa, it is not the object of the veterinarian to stop the disease suddenly; and he that knows his profession will not prescribe strong astringents, and these in large doses, as this mode of treatment may produce worse effects than the disease itself.

If the discharge becomes intermittent, and the dung occasionally hard and difficult to pass, then it will be necessary to have recourse to laxatives, to clear out the exciting cause of this irregularity. The first and most simple to try is a dose of half-a-pint of castor-oil, or half-an-ounce of the powder of bitter-apple, either of which may be given in a pint of flour-gruel.

Great attention is required to the different conditions in diarrhœa, otherwise the disease may assume that character which is termed *rottenness or scouring-rot*, a disease which too often terminates fatally. The system should not be allowed to become too low; to prevent which, nourishing mashes of oatmeal and malt should be frequently given, and in small quantities at a time; for during the progress of this malady, it is found, that so long as the animal is permitted to indulge in a full meal, so long will the complaint continue.

It will be found, that cattle, when left to themselves, will seldom eat more than is proper to enable them to perform the necessary function of chewing the cud. It is only when they have been previously starved, or removed from a poor to a rich pasturage, that they exceed in this respect: so that, in those cases, they ought to be allowed to remain only a short time at first in such situations.

A low condition of the system will induce diarrhœa, and when it proceeds from this cause, there is more danger to be apprehended, and the animal is, consequently, less able to withstand any sudden transitions from poor to rich living, or from heat to cold, or from cold to heat. When, either from a dearness of food, or scarcity, the animal is kept on short allowance, it is a wise plan, when the luxuriance of spring arrives, to continue feeding the animal in the straw-yard, or house, upon a mixture of chopped hay and succulent grass, for a short time previous to turning him out to the field.

It is not uncommon for calves at the time of weaning to be affected with diarrhœa, which at this tender age should be stopped by

Prepared chalk . .	2 ounces,
Gruel composed of flour and milk . . .	1 quart ;

to be given every six hours, until the symptoms are arrested. But if in two days evident signs of a cure are not visible, to the above must be added a drachm of powdered ginger, and one drachm of laudanum.

SCOURING-ROT.

Symptoms.—This is a dangerous malady, and sometimes is very deadly. Long-continued purging induces loss of flesh and general weakness ; and so reduced is the muscular fibre, in many instances, that the skin may be seen hanging like a loose garment about their bodies. In other instances the animal is hide-bound ; the hair changes its colour to sandy or grey ; the eyes grow pale ; they eject a thin and slimy matter ; and their pulse is weak and irregular : the excrements often change colour, more particularly in the earlier stages of the complaint. In the more advanced stages of the malady, the fæces appear like food half-masticated, as it passes through the stomach and intestines without undergoing the ordinary digestive process. If the animal is pressed on either side of the spine, immediately behind the shoulders, after a long continuance of scouring-rot, it will manifest symptoms of suffering much pain. When this is the case, it may be inferred that the animal has become unsound, or tainted, and the chances against his recovery are exceedingly small. The excrements in the advanced stage are of a dark colour, with a frothy appearance, and the smell exceedingly offensive.

Causes.—Exposure to cold and long-continued rain, especially if the animal has been previously over heated and over driven ; also drinking cold water when warm. Want of a nutritive diet, in milch-cows frequently induces this disease, which is one of the most difficult to cure.

Remedies.—A great variety of prescriptions have been given for the cure of this complaint, and some have been found very efficacious in some cases, which have no effect whatever in others. One of the points to be chiefly attended to, is to take the affected animal home to the straw-yard or shed, and subject it to dry feeding, which in some cases effects a cure without medical treatment. The following prescription has been found of much utility; it is one of Mr. Blaine's :—

Ipecacuanha . . .	1 ounce,
Nux-vomica . .	1½ drachm,
Galls, finely powdered .	½ ounce,
Alum . . .	2 drachms,
White vitrol .	20 grains ;

to be well incorporated in a quart of boiling water. The following recipe has been highly recommended :—

Alum . . .	½ ounce,
Kino	2 drachms,
Ginger, powdered .	1 drachm,
Castile soap, moistened in water . .	2 drachms,
Powdered oak-bark .	¼ ounce ;

to be made into a ball, with a sufficient quantity of treacle.

When scouring has continued long, considerable irritation in the membrane which lines the intestines, and loss of its mucus must be the consequence. To mitigate this, mucilaginous drinks should be freely given. For this purpose, let a pound of lintseed-meal be boiled to a jelly in two gallons of water, and add to it an ounce of nitre. This will be sufficient to form six draughts, of a pint and a half each, to be diluted in half-a-gallon of warm water. Some practitioners recommend a quarter of a pound of starch to be added to the above quantity of lintseed. Gruel made of milk and flour may be given with advantage; and if the dung assumes a dark colour with a disagreeable odour, then about a gill and a half of castor-oil must be administered, and this may be assisted by clysters of gruel, butter, and laudanum.

When the disease becomes inveterate, some veterinarians have recommended strong tonics, which, in many instances have proved effectual. The following recipe will frequently prevail in bad cases :—

Prepared chalk . .	½ pound,
Ground cassia . .	1½ ounce,
Ground ginger . .	½ ounce,
Hartshorn . . .	1 ounce;

to be made into four balls, and given every four or five hours.

Should all the above remedies prove ineffectual, the disease may then be treated as an affection of the liver, and the following ball administered .—

Blue mercurial pill .	3 drachms,
India rhubarb . .	3 drachms,
Castor-oil . .	3 ounces,
Oatmeal . . .	4 ounces;

which should be repeated for three or four days in succession. This may, however, produce sickness and gripes, accompanied with increased scouring; and in that event it will be necessary to administer astringents, and warm gruel should form the chief drink of the animal while he is under the above treatment. Let the following be given :—

Laudanum . .	2 drachms,
Ground ginger . .	3 drachms,
Catechu, or terra japonica	½ ounce,
Fine patent starch .	4 ounces ;

the whole to be diluted in two quarts of warm water, and given as a drink.

If the animal has received benefit from the above, and a progressive improvement becomes apparent, the animal should be allowed green pasturage for a few hours daily; but the situation must not be low or damp, otherwise a relapse will be the consequence, which will very likely prove fatal. Cows that are constantly milked and poorly fed are frequently attacked with scouring-rot. The remedies which we have above pointed out, will be also applicable to this case. But, while medicine is administered, drenches of oatmeal and flour, mixed, should be given at the same time, but not in great quantities at once, as too sudden changes would be injurious to the animal. After he is able to take a greater portion of food with safety, bean and pea-meal, mixed, should be given as a drench, which contains a greater portion of nutriment than any other vegetable substance. Bran-mashes may be given as a change from the above, until the animal is sufficiently recovered to be turned out entirely.

FARDEL-BOUND, OR EXCESSIVE COSTIVENESS.

Symptoms.—This disease manifests itself by extraordinary costiveness, and alternating with looseness at intervals ; the fæces consisting of a profuse slimy discharge, with portions of hard dung in the form of balls, of different dimensions. Sometimes the complaint is accompanied by considerable swelling of the body, terminating in inflammation, which is manifested by a short heaving of the flanks,

with hard breathing, and a considerable degree of fever. The animal loathes his food, and draws his hind legs towards the belly.

Causes.—This disease is said to have its origin from the animal being kept a length of time on dry food, and from eating the leaves of the oak-tree. It is said to be chiefly confined to the wealds of Kent and Sussex. The swelling of the body is occasioned by the intestinal passage being stopped by the pressure of a strong ligament, which cleaves the interior of the loins.

Remedies.—Give the animal a pint of castor-oil in half-a-gallon of warm oatmeal-gruel, with half-an-ounce of salt of tartar, or carbonate of soda, so that they may incorporate properly. If in twelve hours this purgative does not restore the bowels to their proper condition, let the following formula be administered :—

Salt of tartar . .	3 drachms,
Gamboge, finely powdered	1 drachm,
Tartarized antimony .	½ ounce,
Gum-assafœtida .	½ ounce.

Let the latter be well rubbed down in a small quantity of warm water, until properly incorporated, and then add to the whole two quarts of oatmeal-gruel, and give it as a drink.

Veterinary surgeons frequently treat this disease by operation. The animal is first thrown on the ground, and an incision made in the flank sufficient to admit the hand ; when the operator will insert his hand to feel for the ligament by which the intestine is bound, and having discovered it, he separates the ligament with the nail of his thumb, which enables the intestine to assume its natural position. The part is then sewed up, and it will soon heal if the animal is in a good condition of body.

MORTIFICATION.

Symptoms.—This complaint shows itself by swellings behind the kidneys, and sometimes in the flanks, shoulders, side, or legs, accompanied with a desire to remain in a lying posture undisturbed. The premonitors to dissolution are a most fœtid odour proceeding from the animal. It is seldom that he lives long after the first appearance of the malady: from five to twenty-four hours generally puts a period to his existence. Animals which have died of this complaint have been skinned, and it has been found that the swollen parts contain a gelatinous matter, mixed with very dark-coloured blood, nearly approaching to black. The animal dies without any symptoms of pain.

Causes.—This is a complaint which has only been known to exist in Connecticut, America, where it has proved very fatal to cattle. It is attributed to a change of pasture, or from bad to good fodder, which causes plethora, or fulness, and gorging of the vessels of the body. Cattle in the highest condition are most liable to be affected.

Remedies.—Little can be effected where this malady is not attacked at the outset, and the medicines must be those of a preventive quality. These must be, first, not to make too sudden a change from a bad to a good pasturage, nor too abrupt a transition from a poor to a rich diet. The following aperient should be first administered in the form of a drink :—

Calomel . . .	½ drachm,
Tartarized antimony .	2 drachms,
Cream of tartar .	½ ounce,
Camphor . .	2 scruples;

to be given in a pint of gruel of wheat-flour. And when

it has operated, give the following medicine every day until the symptoms disappear :—

Peruvian bark . .	½ ounce,
Nitre, powdered .	2 drachms,
Salt of steel .	1 drachm,
Camphor, powdered .	1 scruple ;

to be administered in a quart of warm oatmeal-gruel.

CHAPTER IV.

OF FEBRILE DISEASES.

INFLAMMATORY FEVER.

Symptoms.—When cattle are seized with inflammatory fever, they become abruptly stupid and inactive, hang down their heads, seem to move with difficulty, and refuse their ordinary food. Swellings become apparent on many parts of the body ; and if these are pressed by the finger, a crackling sound is heard to issue from them. In most instances the joints are particularly affected; at other times the shoulders, back, or belly are swollen. The disease is generally rapid in its progress, and often proves fatal ; in which case the animal generally dies suddenly, and soon becomes putrescent. The disease sometimes terminates by a collection of matter on the joints, and hence its absurd names, *joint felon, quarter evil, black quarter, black leg, &c.*

Causes.—This malady was not known in Britain until about ninety years ago, at which period it carried off a fifth or even a fourth of the cattle between the first and third year of age ; it, however, seldom or never attacked those exceeding the latter age. It is supposed to have had its origin in the bad quality of food, and the methods adopted to fatten them hastily for the market, by putting them, when in low condition, into rich pasturage. It is also supposed, that the introduction of many of the new grasses into our agriculture has a tendency to induce this complaint.

Remedies.—This disease is most rapid in its action, and consequently requires prompt remedies. Blood-letting is first to be attended to, and from three to four quarts, according to the strength and size of the animal, may be taken ; and afterwards the following purgative given :—

Barbadoes aloes .	3 drachms,
Carbonate of potash .	2 drachms,
Epsom salts . .	6 ounces ;

to be dissolved in a quart of warm oatmeal-gruel.

Stimulants must next be had recourse to, and the following must be given twice or thrice daily, until there are visible signs of the animal's recovery :—

Powdered caraway-seeds	½ ounce,
Ginger . . .	2 drachms,
Ground cassia . . .	¼ ounce ;

to be administered in a pint of warm oatmeal-gruel, or lintseed-tea.

As we have already said, the disease is rapid in its progress ; and when an animal is attacked with it in situations where the above purgative cannot be immediately procured, let the following be given as an interim substitute :—

Common salt, according to the age of the animal, from	4 to 6 ounces,
Castor, sweet, or lintseed-oil	4 ounces.

To be given in a quart of gruel.

If the animal receives relief from this, then the purgative first recommended must not be given.

When swelling in the joints has taken place, the following liniment should be well rubbed into them twice a day:—

Lintseed-oil . .	4 ounces,
Oil of turpentine .	2 ounces,
Hartshorn, or liquid ammonia	1 ounce.

As we have recommended in other diseases, the preventive system is better than the curative. We would therefore recommend that in cattle which have a tendency to fatten fast, to give alterative medicines to keep down accumulation and repletion. The following should be given once or twice a week, as the animal may seem to require it:—

Antimony . .	6 drachms,
Sulphur . . .	6 drachms;

to be administered in a pint of warm gruel.

Some practitioners recommend bleeding; but it is a well known law in physiology, that blood-letting has a tendency to increase, rather than diminish blood. Others have recommended setons in the dewlap, which can have no possible effect. We know of no better preventive then occasionally to remove them to a piece of short pasture, which should be set apart for the purpose on all farms.

MILK, OR PUERPERAL FEVER.

Symptoms.—Restlessness, with cold, shivering fits, accompanied by dry, parched tongue, and quick pulse, lowness of spirit, and debility, are the symptoms by which this malady is accompanied; as also great coldness of the extremities.

Cause.—The ordinary cause of this complaint, is the cow taking cold at the time of calving, which should be carefully guarded against, as it usually happens at a bad season of the year.

Remedies.—In cold seasons cows should be taken into the house some time before parturition, as well as when they are attacked by this complaint, and supplied with dry litter, and the same applications given as in catarrh. The following may also be administered with advantage in addition to the other medicines, and should be given every twenty-four hours, until the symptoms have left :—

Saltpetre, powdered .	1 ounce,
Febrifuge antimonial powder	6 drachms,
Camphor, powdered .	½ drachm,
Prepared kali . .	2 drachms,
Willow-bark powder .	1 ounce.

To be given in a quart of thick oatmeal gruel.

CHAPTER V.

DISEASES, ETC., OF THE EXTERNAL PARTS OF CATTLE.

SCURF, SCAB, OR MANGE.

Symptoms.—This is a disease of the skin, and is manifested by its stiffness, and sticking fast to every part of the body, as if it were too small for the carcass, and first becomes visible about the head and jaws, the skin exhibiting a pale, dry, scurfy appearance, and then extends down the shoulders and back. The animal rubs itself violently against every object which it comes near; and unless remedies are applied, it will tear its skin, and cause bleeding, and thereby produce scabs, which retard the efficacy of the ointment. and allow the disorder to become more deeply rooted.

Causes.—Poverty of the blood is an immediate cause of

this complaint, and it is nearly allied to itch in the human being; and no doubt, like that complaint, is produced by minute animalculæ.

Remedies.—The best specific is mercury; but the animal is so apt to lick its skin, that it is a dangerous remedy. The following ointment has been found effectual in removing the complaint:—

Sulphur vivum, powdered	4 ounces,
Elecampane-root, powdered	4 ounces,
To be mixed with hogs' lard	6 ounces.

Let the whole parts affected be rubbed with this ointment, and repeated in the course of three or four days, if the itching does not abate. Some think that the following lotion is as certain as the above:—

Corrossive sublimate, finely powdered . .	½ ounce,
Muriatic acid . .	1 ounce,
River, or rain-water .	1 quart;

to be applied with a sponge, daily, to the parts affected.

COW-POX.

The following is the description of this disease, as communicated by Dr. Jenner, the discoverer of it, and who first applied it to the human being, and which has proved an inestimable blessing to mankind. Dr. Jenner was a medical practitioner at Berkeley, in Gloucestershire, and often saw the complaint in various dairies in that neighbourhood. He says, "In this dairy country a great number of cows are kept, and the office of milking is performed indiscriminately by men and maid-servants. One of the former having been appointed to apply dressings to the heels of a horse affected with the grease, and, not paying due attention to cleanliness, incautiously bears his part in milking the cows, with some particles of the infectious matter adhering to his fingers. When this is the case, it commonly happens that a disease is communicated to the cows, and from the cows to the dairy-maids, which spreads through the farm, until most of the cattle and domestics feel its unpleasant consequences. This disease has obtained the name of cow-pox. It appears on the nipples of the cows, in the form of irregular pustules. At their first appearance they are of a palish blue, or rather of a colour somewhat approaching to livid, and are surrounded by erysipelatous inflammation. These pustules, unless a timely remedy be applied, frequently degenerate into phagedenic ulcers, which prove extremely troublesome. The animals become indisposed, and the secretion of milk is much lessened."

Frequently another kind of eruption appears on the udder of the cow, which, when not carefully examined, may be mistaken for the cow-pox. It manifests itself by the appearance of a number of white blisters on the nipples, filled with a whitish serous fluid. They are distinguished from the cow-pox pustules, by not having the bluish colour of the latter, as well as their never eating into the fleshy parts, being entirely confined to the skin, and terminating in scabs. This eruption is infectious, but not so highly so as the true cow-pox.

Dr. Jenner was of opinion that this spurious eruption had its origin in the transition of the cow in the spring from a poor to a rich diet, at which period the udder becomes more than usually vascular from the supply of milk. In the west of England dairies there is still a third kind of inflammation, accompanied by pustules, which is not uncommon. When a cow with a naturally small udder is intended for sale, she is neither milked by the hand or by a calf for a day or two previously to her disposal. Conse-

quently, an unusual quantity of milk is accumulated, and the udder is stretched out to an unnatural extent, which also has the effect of distending the nipples, and frequently produces inflammation, accompanied by pustular eruption.

Remedy.—It is not necessary to apply any remedy for this complaint; all that is required, is to keep the teats clean, and handle them gently during milking, and in a few days the eruption disappears.

FELON.

Symptoms.—A partial paralysis of the part affected, arising from inflammation in the lymphatic arteries of the membranes of the joint ligaments, accompanies this complaint; and it is generally a precursor of the disease called *the fall.*

Causes.—This malady has its origin in irregularity of the nervous power, arising from debility or deficient excitement; and is not dependent upon an unusual impetus of the circulating fluid to the vessels of the brain, or impeded return of blood from it.

Remedies.—If the disease has had its origin in a cold, which is most frequently the case, let the following be given, which will in most cases afford relief:—

Camphor, finely powdered	1 drachm,
Gum-guaiacum . .	½ ounce,
Tartarized antimony .	½ ounce,
Fennel-seeds, powdered	1½ ounce,
Mithridate . .	1 ounce;

the whole to be dissolved in a quart of oatmeal-gruel, into which half-a-pound of treacle has been boiled. The animal to have dry bedding, and to be kept very warm for three or four days after the above medicine has been given, and kept in the house during the whole day. The above generally produces the desired effect; but if it fails to do so, it may be repeated in two days afterwards.

FALL.

Symptoms.—This consists of a suspension of motion in all the parts under the head, but still sensation remains. The animal lies down and is unable to rise again. The heart's action continues, although the animal is deprived of the power of voluntary action. It seems a climax of a complication of maladies, which have their origin in cold.

Remedies.—High feeding is frequently the cause of this complaint; and when it is so, bleeding should first be had recourse to, and from three to four quarts may be taken, while the bowels must be kept open. The following alterative will have the effect:—

Gum-guaiacum . .	3 drachms,
Tartarized antimony .	½ ounce,
Fennel-seeds, powdered	½ ounce,
Camphor . . .	2 scruples,
Treacle . . .	2 ounces;

to be administered in thick oatmeal-gruel.

When the complaint does not originate from high feeding, it will be necessary to give stimulants. The following will be found serviceable:—

Powdered cassia .	1 ounce,
Powdered ginger . .	½ ounce,
Tartarized antimony .	3 drachms;

to be given in a pint of gruel.

THE FOULS.

Symptoms.—This disease is nearly allied to the disorder called canker in the horse, and is manifested by the discharge of fœtid matter from the cleft of the hoof, or, in

some cases from one of the claws. Veterinarians have divided this complaint into two kinds, the *soft fouls*, and the *horny fouls*, which are differently treated by them. In the soft fouls, the discharge issues from the cleft of the hoof, and also from the heels, and in both cases the animal becomes very lame.

Causes.—Hard driving and long journeys often produce the fouls, more particularly if the roads are bad, and dirt lodges and dries in the cleft, or behind the heels. It affects cattle of all ages.

Remedies.—For the soft fouls, when cracks take place, these must be well washed with soft-soap and water, and then anointed with tar-ointment, and the feet kept as dry as possible. When a distention of the horny substance takes place, and soft spongy protrusions appear, accompanied with the discharge of matter of a most offensive smell, these soft parts must be cut, or scraped off, and a caustic liquid applied to the parts. The following will prove effectual if well applied :—

Sulphate of copper .	1 ounce,
Nitrous acid . .	½ ounce,
Alum, pounded . .	2 ounces,
Rain, or river water .	1 pint.

When the parts are properly washed with the above, and it has become dry, then a pledget covered with tar-ointment should be applied to the parts.

For the horny fouls, if the hoof feels very warm, and the animal manifests pain on pressure being applied to the parts, and they feel hard underneath, it will then be discovered that a horny substance is penetrating into the softer parts of the foot, either between the two halves of the hoof, or at the heels; these horny parts must be eradicated by cutting. In performing this operation, it will be necessary to throw the animal on some soft ground, or upon straw, the more easily to effect the cutting. After this is done, let the parts be rubbed with the above lotion, and the whole foot wrapped round with a cloth moistened in it. The animal may then be turned out to a soft pasturage. Should, however, the inflammation not subside in a couple of days, bleeding from the veins of the foot will be necessary.

THE GAD-FLY, WURBLES, OR WORMALS.

The gad-fly is exceedingly troublesome to cattle during the summer months, more especially in very hot seasons. This has been minutely investigated by Mr. Bracey Clarke, and is scientifically called by him *œstris bovis*, or *ox-fly*. It has otherwise been called the breeze-fly. Their bite is very painful, and always creates a small swelling in that part of the skin penetrated by its tongue. But that evil of which we are about to treat has been successively denominated, wurbles, or wormals, probably a corruption of worm-holes, which are frequently found on the backs of cattle. The female gad-fly, which produces these humours, we have represented in plate x. fig. 15. From the observations of the celebrated naturalist and physiologist Reaumur, it appears that the female is furnished with a singularly constructed ovipositor, which lengthens by a series of sliding tubes, (place x. fig. 10,) precisely like that of an opera-glass. There are four of these tubes, as may be seen by pressing the belly of the fly till they come into view. Like other ovipositors of the same sort, they are composed of a horny substance. This instrument is furnished with five points, three of which are longer than the other two, and at first sight not unlike a *fleur-de-lis*, though, upon narrower inspection, they may be discovered to terminate in curved

points, (plate x. fig. 12,) somewhat like the claw of a cat. The two shorter pieces are also pointed, but not curved; and by the union of the five, a tube is composed for the passage of the eggs. (See plate x. fig. 11.) It would be necessary, Reaumur confesses, to see the fly employ this instrument to ascertain in what manner it acts, though he is disposed to consider it fit for boring through the hides of cattle.

Mr. Bracey Clarke, taking another view of the subject, is decidedly of opinion that the fly does not pierce the skin of cattle with its ovipositor at all, but merely glues its eggs to the hairs, while the grubs, when hatched, eat their way under the skin. If this be the fact, as is not improbable, the three curved pieces of the ovipositor, instead of acting, as Reaumur imagined, like a centre-bit, will only serve to prevent the eggs from falling till they are firmly glued to the hair, the opening formed by the two shorter points permitting this to be effected.

The extraordinary effects produced upon cattle, on the appearance of one of these flies, would certainly lead us to conclude that the pain inflicted by the ovipositor, is excruciating. Most of our readers may recollect to have seen, in the summer months, a whole herd of cattle start off across a field, at full gallop, as if they were racing, their movements indescribably awkward—their tails being poked out strait and stiff behind them, and their necks stretched forward to their utmost length. All this consternation has been known from the earliest times to be caused by the appearance of the gad-fly.

If Mr. Clarke's views be correct, when the egg of the ox-fly is hatched, the grub (plate x. fig. 17) immediately burrows under the skin, where it feeds upon the fatty matter, and remains until it has reached maturity. As the grub continues to grow, the bumps, or wurbles, increase in dimensions, in proportion to the size of the grub, plate x. fig. *d*. It is not until the middle of May that these bumps can be seen full grown; but, owing to particular circumstances, they do not attain an equal size. The largest of these are sixteen or seventeen lines in diameter by the base, and about one inch high, but they are scarcely perceptible before the beginning, or during the course of the winter.

Young cattle are most commonly attacked by these insects, and the most healthy are fixed upon for the deposition of their eggs; a wonderful proof of the instinct of these flies. Cattle-dealers and farmers have remarked this fact, and the latter always find the hides the best that these flies prefer. The number of bumps, or wurbles, which are found upon a beast, is equal to the number of eggs which have been deposited in its flesh; or, to speak more correctly, the number of eggs which have become matured under the skin, as those which have been fertile. Sometimes there will be found a single wurble on a cow, while in others upwards of thirty have been counted. The ordinary size of the full-grown grub is represented on plate x. fig. 16; and 18 is a magnified figure. Fig. 13 is a greatly magnified view of the tail of the grub.

Remedies.—As soon as it is detected that the skin of the cow is penetrated by this insect, the part may be squeezed between the two thumbs, and the grub will be forced through the aperture in the skin. If the person have not sufficient strength to dislodge it, this can be easily accomplished by the aid of a pair of shoemaker's pincers. This may be done at any time while the grub remains. Any other mode of cure is of no avail. When the grub has been ejected, let a drop of turpentine be put into the cavity, and in a short time it will heal up.

LICE.

When young cattle have been turned out in cold weather they are very subject to lice ; more especially if they are in a low habit of body, and have not been kept clean. Parasites are not only disagreeable to the animal which they infest, but are also apt to be communicated to others. The speediest means should be adopted to destroy them. The following recipe will generally have the effect :—

Common tobacco . .	1 ounce,
White hellebore-root, ground	2 ounces,
Vinegar . . .	2½ pints ;

these to be boiled together for half-an-hour, and the warm decoction to be applied with a soft brush or sponge. A second application seldom fails to destroy the vermin.

TAIL-WORM.

Symptoms.—This disease is known by a portion of the tail being paralysed, and losing its action, which may be seen by holding the tail in a horizontal position, when that portion which has lost its power, so far as it extends from the point, will hang in a straight or perpendicular limber state.

Remedies.—As the tail is so useful an appendage to animals, we would recommend medical treatment to be first adopted, and the following should be given for two or three times, two days intervening between each dose :—

Camphor, finely powdered	1½ drachm,
Tartarized antimony .	½ ounce,
Gum-guaiacum . .	½ ounce,
Fennel-seeds, powdered .	1¼ ounce,
Mithridate . . .	1 ounce;

these to be given in a quart and a half of gruel, in which three quarters of a pound of treacle has been boiled. The animal must be kept particularly warm during the time of taking the above medicine, and for at least a week afterwards.

If action is not restored to the part affected in the course of ten or twelve days, amputation of the part will be indispensable. This should be cut off at the first vertebra above the paralysed part. If no blood issues from the wound, another vertebra must be lopped off. To stop the bleeding, the part must be wrapped in a piece of rag in which is deposited a handful of salt.

STRAINS AND BRUISES.

Cattle are not so liable to strains and bruises as horses; and as they are seldom necessitated to active exertion after an accident has occurred to them, there is less difficulty in curing them. Whether the affection is in the muscular or tendinous parts, we would recommend similar treatment as that employed for the horse under such circumstances.

Fomentation should first be tried, and when the inflammation has been subdued, the following liniment must be well rubbed on the part affected, two or three times daily, until all the symptoms have disappeared:—

Lintseed-oil . .	5 ounces,
Spirit of turpentine .	1 ounce,
Hartshorn, or liquid ammonia	1 ounce.

When any portion of the limbs has been sprained, so as to occasion lameness, and has not been removed by applying the above liniment, it will be necessary to have recourse to a blister.

For sprains or bruises of a more simple kind, the following lotion will generally prove sufficiently strong:—

Goulard's extract . .	½ ounce,
Vinegar . . .	2 ounces,
Water . . .	4 ounces.

WOUNDS.

In treating of this part of our subject, we shall confine our observations chiefly to wounds of a simple nature, for this reason, that when cattle are injured in the internal parts, which requires a long and tedious attention, it will be better at once to kill the animal, because the trouble and expense will counterbalance the profit of a tedious recovery. The flesh of cattle which have received severe wounds, if the animal be immediately destroyed, is perfectly wholesome. Besides, in the attempt to cure severe wounds, there is always a risk of the animal's dying, under the best devised treatment.

In the cure of wounds much depends on their situation, and the form of the instrument by which they were inflicted. A cut from a sharp instrument is very easily healed; all that is required being to bring the edges of the wound together, and keep them in contact by means of a slip of adhesive plaster. But if they are in situations where the plaster is not likely to remain on, in consequence of the action of the muscles or otherwise, a few stitches with strong thread or fine twine will have the same effect; and when it is found that adhesion of the parts has taken place, the string must be cut away, and the needle-holes will quickly fill up. Or the wound may be kept together by means of a pin or two, with thread twisted crossways round them, which can be drawn out after the part has healed. Care must be taken that the wounds are rendered perfectly clean before their edges are brought together. But in fresh wounds, the use of stimulants as a wash, is to be carefully avoided, all that is necessary being to wash the parts with warm water. Ignorant quacks often apply salves and other greasy substances to fresh wounds, which, instead of healing them, produce ulceration and sores; and stimulants rather retard the progress than facilitate the natural healing process.

Where wounds are inflicted by a round substance, or an unequal-sided, or triangular instrument, they are more difficult, and more tedious to heal. And if the wound is deep, sewing or pinning the parts must not be had recourse to. In such cases, deep-rooted suppuration is almost certain to attend them; and although the external surface may be brought together and healed, ulceration will be lurking beneath, and the matter there collected must sooner or later find vent. Whenever it is suspected that ulceration is going on below, it will be better to keep the surface open, and in about a week probe the wound to the bottom, and thus make a free opening for the escape of the accumulated matter, which should be pressed out, and a warm poultice applied to the part to draw out all that remains. As soon as the inflammation completely subsides, granulation of the sides of the wound will take place, and it will ultimately heal up.

In cases where valuable breeding cattle have received deep and severe wounds, and the proprietor is anxious to preserve the animals, then every means must be adopted which are known in the veterinary art to effect a cure. One of the first things to be attended to is to keep down inflammation. This is most effectually accomplished by means of copious bleeding. In cases of the animal being gored, or deeply wounded in the belly, by leaping over a fence or other object, it often happens that the incision is of such an extent as to permit the bowels to protrude. The first thing to be done in such cases, is to see that the intestines are clean, and free from dirt or hair ; and if they are not so, let them be carefully washed with a sponge and warm water, and then return them into the abdominal cavity, and stitch up the wound carefully with a crooked needle and strong, well-waxed linen thread ; and afterwards apply a broad roller round the carcase of the animal, to prevent the internal pressure from tearing the sides of the wound asunder. The animal should then be placed in a situation where it can remain undisturbed. Its diet for some time must be limited, and consist of such food as will prevent it from becoming costive, such as mashes of bran, or thick oatmeal-gruel, and occasionally fresh grass. But should costiveness come on, then let a pint of castor-oil be given in a quart, or half-a-gallon of thin warm gruel. It is a most important point to keep the bowels open in all such cases.

In protrusion of the bowels it often happens that a quantity of air collects in the part which has been forced out, and so enlarges it that the orifice of the wound will not admit of its being returned. It will therefore be necessary to enlarge the opening with a sharp knife, but very great caution is necessary not to cut any vital part. This is most effectually prevented by guiding the knife with the fore-finger.

When, however, such dangerous wounds have been inflicted, it will be safer to have them treated by a skilful veterinary surgeon ; and it is only for the instruction of those who are far from such aid when an accident occurs that we have pointed out the best mode of treating it.

When parts which are greatly inflamed become gangrenous, instead of suppurating, exciting stimulants must be applied. Let the following simple application be first tried :—

Tincture of myrrh .	2 ounces,
Corrossive sublimate .	12 grains,
Pure water . .	4 ounces.

Some practitioners recommend a solution of the sulphate of copper, in the proportion of half-an-ounce to four ounces of water.

The following has also been advantageously used :—

Hogs' lard . . .	6 ounces,
Bees' wax . . .	1 ounce,
Spirit of turpentine .	6 ounces,
Powdered verdigrise .	1 ounce.

Let the first three ingredients be melted together, and the verdigrise then added. The mixture must be stirred until cold, to prevent the verdigrise from falling to the bottom.

All other wounds must be treated by practical veterinarians, or dealt with according to the judgment of the possessor of the animal: to particularize all such as may occur would require more space than our limits will admit of.

CHAPTER VI.

OF GESTATION, PARTURITION, &c.

GESTATION.

The period of gestation in the cow is about nine months, and she rarely produces more than one at a time, although instances have occurred of two, and even three being brought forth: but the latter case is exceedingly rare. The time at which the cow has taken the bull should be carefully noted, that she may be dried off in proper time before calving. She should also be allowed as much rest as she

will take for some time previous to calving. Her food should be of good quality, and rather nutritious than otherwise. By pressing the hand on the left side of the belly in an early stage of pregnancy, the calf can be felt.

It may be well for the information of those who only keep one or two milch cows, to know that by proper attention to their food, the animals may be continued in milk, without detriment to the cow or her calf, till nearly the time of calving. This has been satisfactorily proved, that permitting the cows to go dry for two months previous to calving, that no good results were found to arise from it.

In cold and severe weather, in the winter, when cows are in calf, they must be taken into houses during the night, and even in daytime when stormy. This is more especially to be attended to for a couple of weeks before calving, as, should the cow drop the calf in a cold, wet field, there is a possibility that both may perish. Even in the finest weather it will be prudent to take the cow and calf into the house at night, for a week or two.

If the time of calving should be rather late in the season, it will be judicious to turn them out to a fresh and rich pasturage for a month or six weeks previous to calving; but when their parturition is to happen early, then they must be fed with good hay, and turned out into a straw-yard for an hour or two during the day, for the benefit of air; and, if it can be had, green food should be given along with the hay.

During the time of gestation, cows are liable to several complaints, such as costiveness and strangury, or a difficulty in voiding urine. These must be carefully attended to, otherwise they may cause the cow to slip her calf.

Strangury will be known by the animal making frequent painful attempts to stale, and by her voiding only a small quantity of urine at a time, and frequently none at all. The following must be administered until the complaint is removed :—

Camphor, powdered .	2 drachms,
Nitre . . .	1½ ounce,
Spirit of nitrous æther	½ ounce,
Laudanum . .	½ ounce,
Oatmeal-gruel, warm .	1 pint.

When strangury is accompanied by costiveness, which is frequently the case, immediate recourse should be had to laxatives. A pound of Epsom salts, dissolved in half-a-gallon of warm gruel, may be given ; and the discharge assisted by administering clysters at the same time, consisting of four ounces of lintseed-oil, and a quart of thin warm gruel, with half-an-ounce of salt of tartar to make them incorporate. If an evacuation does not speedily take place, the clyster must be repeated in half-an-hour afterwards, and continue every twenty minutes, until it has the desired effect.

It will be injudicious to feed a cow too much, previous to calving, as in that event they may be attacked with what is termed the milk-fever, or, in other words, inflammation in the womb. If it is found that cows have too great a tendency to fatten previous to calving, they must be removed to a less nutritious pasture, or stinted in their diet, which is much more safe than reducing them by the aid of medicine. But if they cannot be easily reduced, and the time of parturition be close at hand, then it will be necessary to have recourse to bleeding.

ABORTION.

Cows are very liable to abortion, or, as it has been termed, slipping their calf, in the earlier stages of gestation. A

peculiar state of the atmosphere sometimes induces this, and hence it becomes epidemical. When this condition of the atmosphere takes place, the animals are rendered debilitated to a certain extent, consequently if they leap hedges and ditches, or are strained or frightened, they are liable to slip their calf. Even the smell of carrion is said to induce abortion. Some have supposed that sympathy will produce it, and, in consequence, have recommended, that when cows do slip their calves, they should be removed from the others. When cows have been rendered abortive, from whatever cause, they must be nursed for some time afterwards, and have mashes given to them.

SWELLING OF THE UDDER.

This is a complaint to which cows are liable about the time of calving.

Symptoms.—Considerable distention of the udder takes place, accompanied by inflammation, which not unfrequently causes an abscess.

Remedies.—Whenever the swelling becomes apparent, bleeding must be resorted to, and from three to four quarts taken. This must be followed by the following laxative :—

Epsom salts . .	1 pound.
Castor, or lintseed-oil .	2 ounces,
Warm gruel . .	1 quart.

Fomentation of the udder is indispensably necessary. Let decoctions of elder, hemlock, or mallows be made, into which large woollen cloths should be dipped while the liquor is hot, and after wringing them, they should cover the entire udder, and the cloths kept in their place by means of cords. This must be repeated every three or four hours, until the inflammation has subsided. If there still remains any hardness, let the parts be rubbed with the following liniment three or four times a day, which will have the effect of reducing the hardness :—

Lintseed-oil . .	4 ounces,
Spirit of turpentine .	1 ounce,
Hartshorn, or liquid ammonia	½ ounce.

When inflammation of the udder is caused by the animal taking cold, or what is termed a *chill*, staring of the coat and loss of appetite will follow, accompanied by a quickened breathing; it is then certain that the animal is labouring under a certain degree of fever. In this event, bleeding is the first remedy, and afterwards give the following stimulating laxative, warm :—

Common salt . .	6 ounces,
Lintseed-oil . .	6 ounces,
Mustard . . .	1 ounce,
Salt of tartar . .	¼ ounce,
Thin lintseed-gruel .	1 quart.

The cow must be kept warm and dry, and under a cover. Her food should consist of warm mashes of malt or bran, the former being preferable. Let the water given as drink be warmed, and an ounce of nitre, finely powdered, put in it, morning and night.

PARTURITION, OR CALVING.

In most instances animals do not require the aid of man in bringing forth their young, as nature works her own ends. The principal thing to be attended to, is to have the animal placed in a dry and warm situation. But, as it is possible, that a wrong presentation or an accident may occur, it will be proper to have a person watching the animal when parturition is near at hand. Preternatural positions are rather rare; but it has been said, that the short-horned

cattle are more liable to it than others. How this can be the case appears remarkable.

The natural presentation of the calf is, with its head and fore-feet, the muzzle resting between the feet, with the back of the animal upwards. Mr. Downing, a veterinary surgeon, who had much experience, enumerates seven different preternatural presentations; namely :—

1st. Reverse, or with the tail and hind-quarters first.—This position being favourable for extraction, let nature take its course, but assist the animal in a speedy delivery, to prevent the possibility of suffocation. Let the haunches be pressed back with the palm of the hand, and seize the bend of the hough of one leg, and pull it until the foot is reached, which will facilitate the extraction of both feet.

2nd. The fore-feet first, the head not being visible.—Get hold of the nose or face-bone, and place the head in its proper position, between the fore-legs. This requires the arm of the operator to be stretched its full length, being careful that the fingers are firmly fixed, so that advantage may be taken of every throe, as it occurs.

3rd. The side—belly upwards, the head being reversed over one shoulder, the legs appearing.—Let the calf be moved backwards by gentle pressure, and bring the head forward to the legs.

4th. The fore-feet with the head under the brisket.—Let the calf be pushed back until the head is felt, then take hold of the nose and pull at it, when it is certain that the head is in a proper position; but force must on no account be used until it is certain that it is so.

5th. The head alone, or with only one fore-leg accompanying it.—Push the calf back against the shoulders and brisket, and the feet, or one of them, will be found folded under the belly; pull the feet forward, one at a time, while the hand is gently placed on the bend of the knee. It not unfrequently happens, that the head becomes so much swollen and bruised, that it cannot be returned ; when this is the case, the only thing which can be done to save the cow, is to amputate the head of the calf, after having first skinned it. Cut through the skin of the forehead in a straight line, from the nose to the poll, and force it back over the first joint of the neck, at which place let the head be divided from the body, and push it back into the womb so as to enable you to lay hold of the knees, and after wrapping the loose skin over the end of the neck-bone, while an assistant keeps hold of the skin, in order to guide it clear of the haunch-bones of the cow ; let the calf be extracted gently ; but should it not come fairly forward, let the calf be pushed back immediately, and properly adjusted before again pulling it out.

The same treatment is applicable to the 6th, when there is a presentation of the head and a single leg, or the head alone.

7th. The calf lying on its back, with its four legs folded nearly together, and close up to the cow's back ; the head appearing, or doubled back, even with the ribs, on one side or other ; the hind-leg perhaps appearing.—If the latter is the case, let it be put back, as it is impossible to extract the calf with a hind and fore-leg together, and the difference between the knee and the hough will be at once discovered. The head in this case being doubled back, must of course be returned to its proper position, as mentioned above. As this is a case where time is required, the cow often becomes very impatient and restless; but if quiet, the operation may be performed easily and deliberately. But if it is found that extraction cannot be accomplished without the use of the hook, then the operator must take hold either in the sockets of the eyes, cavity of the ears, or under the jaws. Sometimes the calf is unnaturally swollen, in consequence of dropsy, and thus the cow is unable to give birth to it. When this is the case, it will be necessary to pierce the belly of the calf with a knife, to allow the water to escape.

A popular author says, "When every other plan has failed, for turning the calf, so as to put him into a favourable position for delivery, the following has often succeeded:—Let the cow be thrown down in a proper position, and placed on her back; then, by means of ropes and a pulley attached to a beam above, let the hind parts be raised up, so as to be considerably higher than the fore parts; in this position, the calf may be easily put back towards the bottom of the uterus, so as to admit of being turned, or his head and fore legs brought forward without difficulty."

Mr. Lawrence, an experienced veterinarian, gives the following rules, which merit attention:—

"1st. Employ timely assistance before the animal is exhausted.

"2nd. Extraction never to be attempted in an improper position.

"3rd. Supple the hand and arm with warm water and fresh lard.

"4th. Examination best made, the cow standing, and in the interval of pains.

"5th. In pulling at the feet, inclose the claws, or hoofs, in the hand, that the horn may not bruise the cow.

"6th. The navel-string bursting, and the usual flux of blood of no consequence.

"7th. Instruments to be used only as the last resort, and by experienced and steady persons only."

Should it be necessary to assist the cow, the position of the calf may be ascertained after the waters have been seen. A cord should always be at hand to attach to the fore-legs of the calf, in order that each natural exertion, or throe, may be assisted. Always keep the head free from obstruction.

It sometimes happens that the passage to the uterus is so contracted and sinewy as to obstruct the passage of even the smallest hand; and, indeed, even the finger, in some cases. This is called horning of the lye, or calf-bed. This occurs even at the last stage of gestation; and many cows cannot give birth to their calves in consequence, and not a few have fallen victims to it. When the period of parturition has arrived, and the animal manifests difficulty in parting with her calf, a small hand, which has been anointed with hogs' lard, should be introduced into the vagina, so that it may easily be effected, and it may then be ascertained whether this horning of the lye has taken place; and if it should be found to be the case, recourse must be had to the following operation, which, however, we would recommend to be performed by a veterinary surgeon, if one can be had easily; but if not, there will be no alternative but to proceed with the operation:—Procure a small, very sharp knife, with a blade of about an inch and a half in length, and with a hollow on the back part, near the point, on which the extremity of the fore-finger must rest, to guide the knife in cutting, and let the point and edge of the knife be covered as much as possible, to prevent it cutting the vagina. It must have a short handle, so that the fore-finger of the operator may always be kept forward, as far as the extremity of the blade, to prevent any danger from its edge cutting the sides of the vagina. With the point of the knife cut the lower side of the passage to the womb, and when the horny obstruction is completely divided, the animal will feel immediate relief, and the natural pains will be resumed, and with a little assistance the calf may easily be extracted, and in many instances by the efforts of the cow alone.

When this horny obstruction exists, it will be observed, that those necessary alterations preparatory to calving do not take place, and when this is noticed, particular attention must be paid in examining into the cause, why due preparation has not been made by nature for the change about to take place.

When the animal has got quit of its calf, means must be adopted to heal the wounded parts within. The best liniment for that purpose is the following; namely, camphorated spirits of wine, introduced by a long pointed syringe, which will reach the neck of the womb. This should be applied twice or thrice a day, while the animal is kept warm, and supplied with good fresh food and dry litter.

So soon as the calf has been extracted, whether in natural or preternatural labour, the placenta, or after-burden, should be brought away as speedily as possible. Much force should not, however, be used, as this might cause hemorrhage, and endanger the life of the animal. If allowed to remain long after the birth of the calf, it is apt to become putrid, and mortification in the womb will follow. Some cows, after they have dropped their calf, and the after-birth has come away, have a propensity to eat the latter, which should never be permitted, if possible.

When the calf has been properly cleaned, by the mother licking it, or by the use of warm water and a sponge, the navel-string must be secured by a ligature of waxed thread, or fine tape wound several times round it, at the distance of two or three inches from the belly. Then divide the umbilical cord, or navel-string, a little way beyond the part which is tied.

After a cow has calved, she should be kept in the house for at least two days, and never allowed to drink water which is quite cold ; it will also be of benefit to mix a little oatmeal with the tepid water. On the third and fourth day the animal may be turned out from twelve to two o'clock, and not entirely exposed to the field for five or six days.

FALLING DOWN OF THE CALF-BED.

Cause.—A difficult labour, with a predisposition to weakness in the part, is the ordinary cause of this malady.

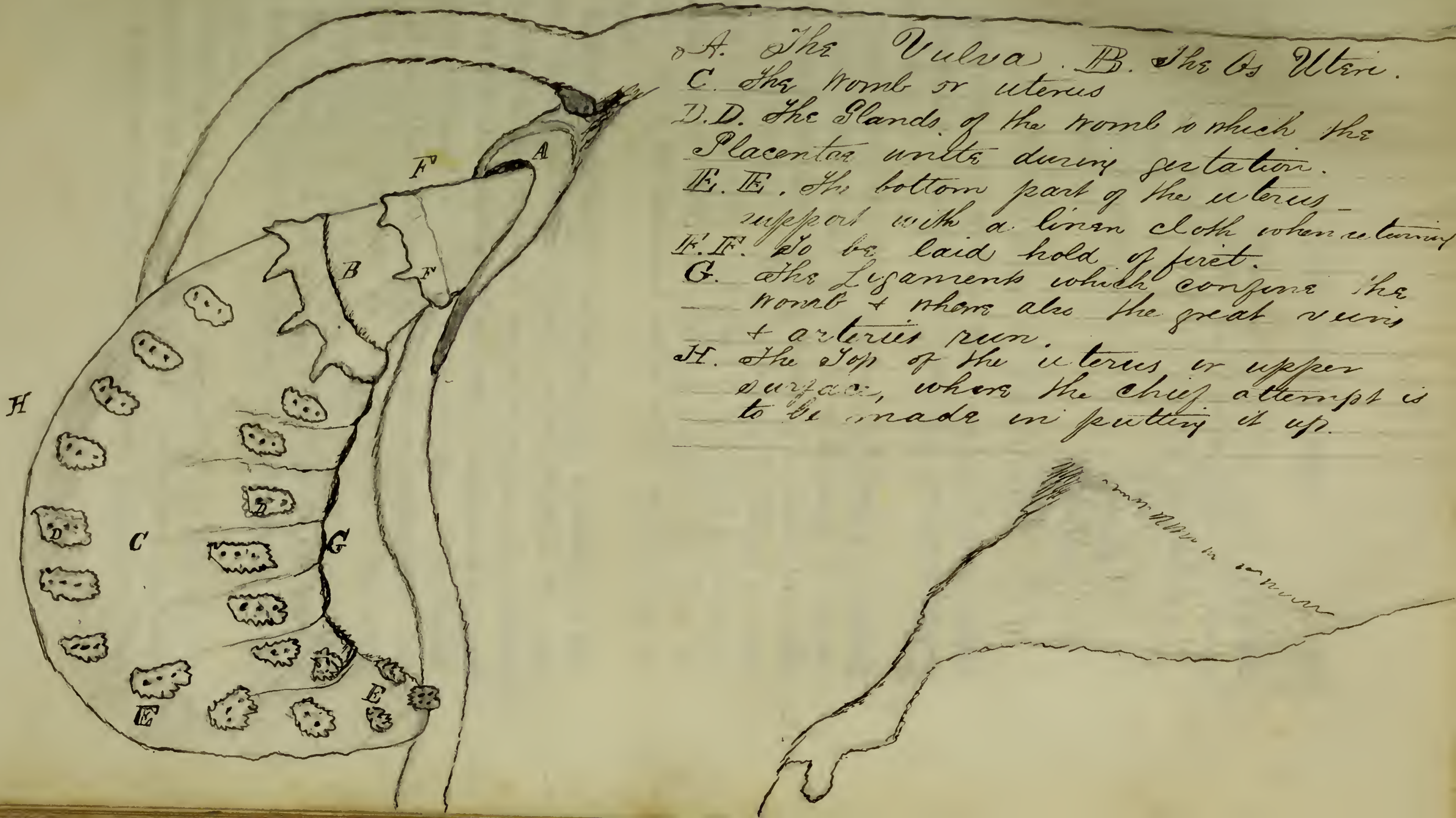
Remedies.—If there is any reason to apprehend the falling down of the calf-bed, the animal must be attentively watched, and great caution exercised in the removal of the placenta, or cleaning, as it is popularly termed, because, if flooding takes place, it may cause this malady. When. however, it has fallen, it must be carefully replaced, and the hand of the operator kept in it, until it has resumed its usual warmth. When he is satisfied of this, let the hand be cautiously withdrawn, and the following draught be given :—

Willow-bark, powdered	2 ounces,
Camphor	1 drachm,
Powdered nitre	½ ounce,
Febrifuge antimonial powder	1 ounce,
Laudanum	½ ounce,
Lintseed, boiled in two quarts of water	6 ounces.

Give the draught in a lukewarm state, and let the cow be kept as quiet as possible, with her head on an inclination of fifteen degrees lower than the haunches.

We would recommend that a veterinary surgeon should be employed to attend to a cow, both in performing the

Inversion of the womb after calving.—



A. The Vulva. B. The Os Uteri.
C. The womb or uterus
D.D. The Glands of the womb to which the Placenta unite during gestation.
E.E. The bottom part of the uterus — support with a linen cloth when returning
F.F. To be laid hold of first.
G. The Ligaments which confine the womb + where also the great veins + arteries run.
H. The Top of the uterus or upper surface, where the chief attempt is to be made in putting it up.

operation and in administering to her cure afterwards. But, where this cannot be easily accomplished, let the exposed parts be rubbed with the following liniment:—

Brandy . . .	½ gill,
Camphorated spirits of wine	1 ounce,
Olive-oil . . .	2 ounces.

DOWNFALL, OR SORE UDDER.

Symptoms.—The milk assumes a curdled state, the udder enlarges, and tumorous, knotty swellings are perceptible in parts of it.

Cause.—Cows that have long been habituated to milking are most liable to this disease, in consequence of the lacteals having assumed a strong tendency to absorb the milky fluid of the stomach. It is consequently difficult to counteract this tendency; and when it is wished to render the animal dry of milk, the ordinary methods fail from the power which the increased action of the vessels have acquired.

Remedies.—Prevention is better than a remedy in this case. It should be particularly noticed whether the milk gradually lessens of its own accord when the cow is milked dry, or that the operation of milking is required to be more seldom performed in order to render her dry. If the former be the case, then bleeding will be rendered unnecessary; but in the event of the latter, she will require to be bled every fourteen days, for six weeks, in order to divert the action of the lacteals, and allow those which absorb the portion intended for blood to be increased in their powers of absorption.

If this be not attended to, a portion of the milk will be carried into the udder, where it will thicken and coagulate, and finding no discharge in the ordinary channel, will necessarily corrupt, and there will be no way of finding a vent for itself, except by ulceration of the udder.

When the symptoms pointed out have manifested themselves, every means must be adopted to bring the indurated parts to suppuration, by means of warm poultices of oatmeal, and emollient unguents, and the milk drawn from the teat nearest the hardened portions. When suppuration has taken place, the part must be kept clean, and washed frequently with warm milk and water, and afterwards the wound must not be exposed to the action of the air.

If, however, this complaint is taken on it first appearance, it may be kept back by the following specific being given every day, until the hardened parts disappear, the swelling subsides, and the milk is secreted as before the malady becomes apparent :—

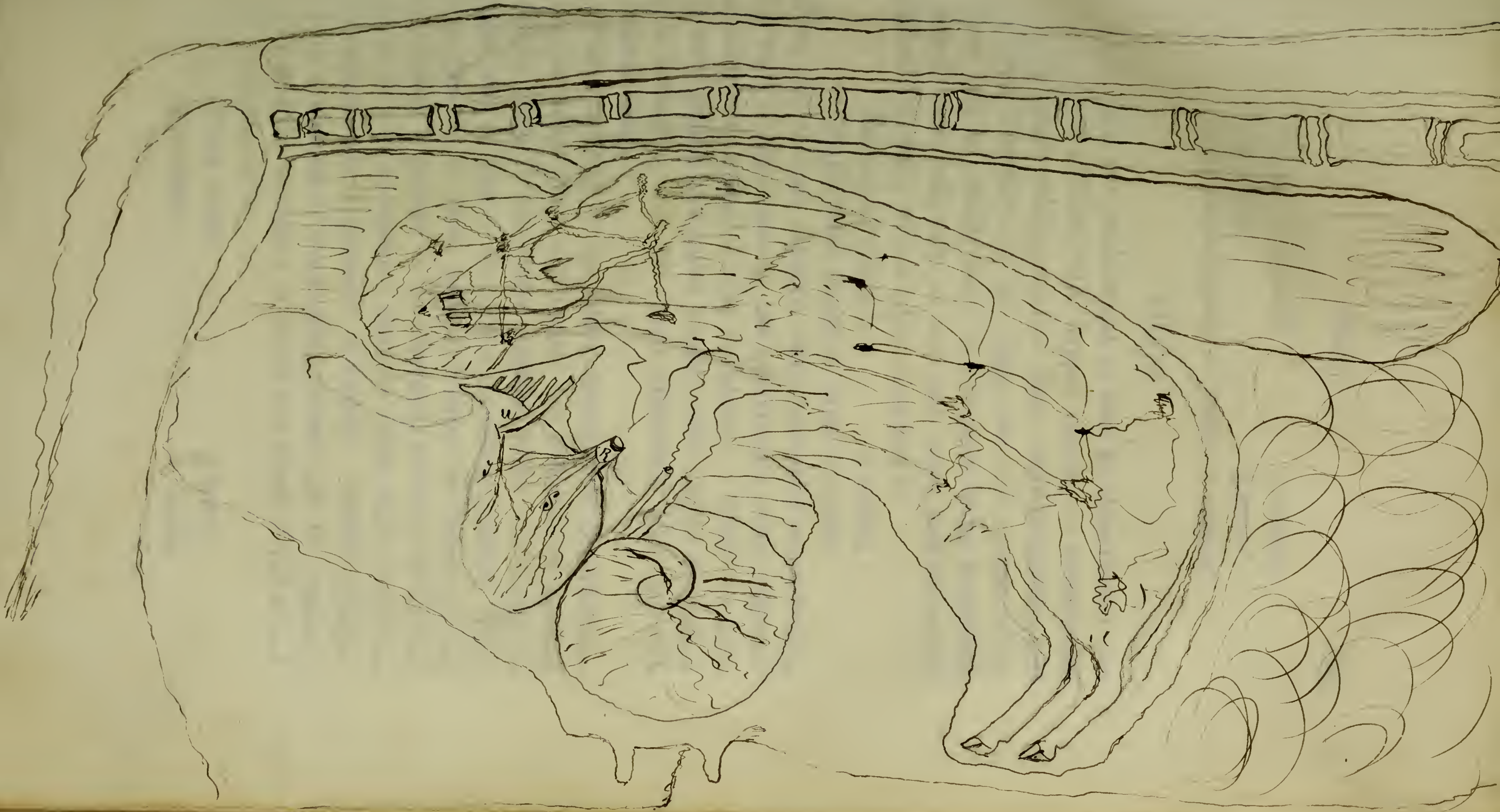
Salt of tartar . .	3 drachms,
Epsom salts . .	½ pound,
Saltpetre . . .	1 ounce;

to be reduced to powder, and mixed with about three pints of warm oatmeal-gruel.

The following recipe has been said to be effectual in removing bad cases of downfall, and should be administered every twelve hours :—

Purified nitre . .	½ ounce,
Salt of tartar . .	½ ounce,
Febrifuge powder of antimony	½ ounce,
Peruvian bark . .	¼ ounce,
Fennel-seeds, powdered .	1 ounce ;

to be given in warm oatmeal-gruel. To be repeated at least three times, and the hardened parts bathed with the following lotion :—


u
y
R
S

Extract of goulard .	2 ounces,
Hartshorn . .	½ ounce,
Camphorated spirits of wine	8 ounces.

CHAPS.

Cows that are cat-hammed, or that go close behind, are liable to be afflicted with chapped udders, in consequence of their thighs rubbing against them, which sometimes also produces ulceration in the thighs, as well as the udder. These may be readily cured by the parts being frequently washed clean with soap, or soda and water, and afterwards bathed frequently with a lotion composed of

Extract of goulard .	2 ounces,
Camphorated spirits of wine	6 ounces.

When the teats are chapped, which generally proceeds from the want of cleanliness in the milkers, the same treatment as above recommended may be adopted. When the teats are very painful and much cracked, they should be washed with laudanum, and the cracks afterwards filled up with prepared chalk.

Where swelling of the udder, accompanied by inflammation, has taken place, and matter has collected, an opening must be made in the lowest situation where the matter is lodged, and as near to the side of the teat as possible. Then let a quantity of warm milk and water be forced up the wound with a syringe, so as effectually to carry off all the matter, this to be repeated twice or thrice daily, until the part assumes the appearance of healing. Should granulation, or symptoms of the healing process not be apparent, then it will be necessary to excite the edges of the wound with a solution of

White vitriol . .	¼ ounce,
Rose-water . . .	4 ounces.

Sometimes washing the parts with spirit-and-water will answer the same purpose.

REARING OF CALVES.

Some cows will disown their progeny soon after birth ; to prevent this, let a little salt be thrown over the back of the calf, and the mother will speedily take to licking it, and afterwards allow it to suck her.

About an hour after birth, we would recommend that the calf should be given about a pint of lukewarm oatmeal-gruel, which is better than the first milk of the cow. And when it is designed to wean calves, for the sake of the cow's milk, the operation is commenced when they are about a fortnight old, in which cases the best substitute for the milk is that recommended by the late Duke of Northumberland, who was a zealous agriculturist. The following is the mode of preparing it :—Take one gallon of skimmed-milk, and to about a pint of it, add a tablespoonfull of treacle, or golden syrup, and after mixing them well, take an ounce of lintseed-oil cake, finely beaten down, and strew it slowly into the milk, stirring it all the while with a spoon, until it is thoroughly incorporated ; and when it is so, add to it the other portion of milk, and place it on the fire until it is the warmth of new milk, when it may be given to the calf. Sometimes water is substituted for milk ; when that is the case, let four ounces of lintseed-meal be well boiled in a gallon of water, and afterwards add half-a-pound of treacle. which must be added when the lintseed-meal has been slowly and thoroughly boiled.

To secure health and strength to the calves, the surest plan is to allow them to continue with their dam, and be suckled by her, until they have acquired sufficient energy to provide for themselves. Therefore, they should be permitted to run about with her for twelve months. Calves, however, are apt to bruise the udder and teats, by butting against them with their head while sucking. To obviate this, they are prevented from sucking by means of a small piece of leather, with little sharp iron spikes upon its outer surface, and attached to the snout of the calf in such a manner as to permit it to feed upon grass, while it will prick the udder of its dam, and she will therefore not permit the calf to suck her. The cow is only milked twice a day, and it is at those times that the calf is permitted to suck the teats of one side, while the milkmaid strips those of the opposite side; and when she has completed the milking, the muzzle is again replaced.

In the great Yorkshire dairies, calves are hardly ever permitted suck; they generally drink the new warm milk from a pail. This is continued for two or three weeks, and for the next three weeks they are fed upon half new and half skimmed-milk. After this, upon skim-milk alone, and even sometimes mixed with water, and ultimately with the addition of a little oatmeal-porridge, until they are able to feed entirely upon grass.

The practice in Cheshire is to allow the calf to suck its dam for the first three weeks, and it is afterwards fed upon warm whey or buttermilk, to which water is sometimes added, with the addition of oatmeal or flour. To every forty or fifty quarts of liquid, one quart of meal or flour is considered sufficient. On this they are fed night and morning for some weeks, and then it is only given to them once a day, until they are three or four months old, when they are considered able to live entirely upon vegetable food.

In Gloucestershire, calves are only permitted to suck about two or three days, after which they are fed with skimmed-milk warmed. When they are able to masticate a little, they have given to them chopped hay, split-beans, or oatmeal and water; and sometimes oats, which latter is an expensive food.

In Norfolk, calves are permitted to suck their dams twice a day for a fortnight, and for the next fortnight, to be fed with the pail; then only once a day for a month or two, and accompanied by cut hay, turnips, or carrots.

A different mode of treatment takes place in Sussex, where calves are permitted to suck the cows for two months to twelve weeks; after which they are fed with skimmed-milk, with a mixture of oatmeal and water. Sometimes they are weaned at the end of this period, and fed upon cut hay, turnips, &c.

It has been found that lintseed boiled to a jelly, in the proportion of one quart of seed to six quarts of water, forms an excellent substitute for milk in rearing calves. A pint of this to be given three times a day in a quart of water, slightly warmed. Calves fed in this way thrive as well as if fed upon milk.

In America, calves are fed with gruel, made of one-third barley and two-thirds oats, ground very fine. To each quart of flour add twelve of water, and boil it for half-an-hour. Let it stand until it has become of the heat of milk from the cow. Each calf to be given a quart of this morning and evening. When calves are ten days old, a bundle of soft hay is tied up in the middle of the cow-house, which they will come to eat by degrees. The quantity of gruel must be gradually increased until they are two months old, by which time they are generally enabled to provide for themselves. Three bushels of the above compound will raise six calves.

One of the most important objects to be attended to in rearing calves, as well as in feeding all animals, is to pre-

Inflammation of the womb

Epsom Salts	1lb
Nitre	ʒij
Camphor	ʒss
Coriander Seeds	ʒj

to be given in 2 quarts of water gruel & ½ pd of Treacle

afterwards

Crude Opium & Camphor āā	ʒss
Nitre	ʒij
Asafoetida	ʒij
Aniseed	ʒij

to be given in a pint of ale & 1 quart of gruel

serve the utmost regularity in the hours of feeding, and not to give too much at a meal. It has been found better to feed thrice a day instead of twice.

When calves are not intended for breeding from, it is the practice to castrate the males, and spay the females. These operations should be performed when the animal is fifteen or twenty days old. After the operation great care is necessary to prevent the wounded parts from being exposed to the action of the air. They must be kept quiet and warm for the first three or four days afterwards, and not allowed much drink.

The time when cows should be put to the bull is not until they are three years old, although it is not unusual for farmers to commence breeding from them at two years. But this latter has a tendency to weaken the system, as cows can hardly be expected to have attained their full strength at two years.

There are many other methods adopted in feeding and fattening calves and cattle, but these come more within the scope of a work on agriculture than of one on farriery.

THE CORDS.

SYMPTOMS.—This disease is so rapid in its effects, that the animal is frequently dead before it is discovered that it is labouring under the malady. It is seized with spasmodic contractions, and dies in convulsive fits.

Calves that die of the cords are found, upon dissection, to be very red in the flesh, with all their small ligaments hard and stringy in their appearance; and hence the name of the malady. All the symptoms strongly indicate a considerable degree of plethora.

CAUSE.—It has been found that most calves which are attacked by this complaint, are those which are closely confined to the house, and especially those which are brought up by the hand. It seldom attacks calves which are above six weeks old.

Remedy.—Prevention is better than a cure; and, therefore, we beg attention to what has proved eminently successful, which, however, is more especially applicable to breeding on a large scale.

The day on which the cow has been bulled must be noted, and the consequent time of its parturition carefully watched, night and day. As soon as the calf is born, it should be received into a large basket, or scull, constructed of willows, in which is deposited clean straw. Let it be carried to a stall in the calf-house, which should be situate close to the cow-house, and rubbed dry with fine hay or straw. The cow should then be milked, as soon as she has recovered from the effects of calving, and about a quart and a half of this, a little warmed, be given to the calf, which quantity ought to be repeated every six hours. The quantity must be gradually increased until the animal is a month or six weeks old, according to his strength. Always avoid giving it cold milk during this time, as it generally produces a chilly, trembling sensation.

AGE OF NEAT CATTLE.

Neat cattle do not shed any of their teeth until they are turned two years of age, after which they get two additional teeth; and when two years older, other two make their appearance; and they acquire two more every succeeding year, until they reach their fifth year, by which time they are said to be *full-mouthed*, although they are not properly so until they attain their sixth year, because, the two corner teeth, which are the last renewed, are not properly on a level with the others until that period.

The perfect mouth consists of eight cutting or incisory teeth in the under jaw, and none in the upper, with six grinders or molar teeth on each side, both in the upper and lower jaw, making a total of thirty-two teeth. At three years, the horns are furnished with a wrinkle at their base, and every succeeding year they acquire an additional wrinkle; so that after the animal has reached its third year, its age may at once be ascertained by counting the wrinkles or circles at the base of the horns. In some cattle these wrinkles are not so apparent as in others; and many unprincipled dealers file down some of the wrinkles when they wish to pass off old cattle for young ones, and thus deceive those who are unsuspicious of the imposition. But experienced persons may detect the trick by a close examination of the horns, as it is hardly possible to perform this unworthy trick in so nice a manner as to give the part which has been rasped down the natural appearance of the horn.

CHAPTER VII.

MANAGEMENT AND FEEDING, ETC., OF CATTLE.

COW-HOUSES.

Nothing is more conducive to the health, and consequently to the feeding of the animal, than well-aired and ample cow-houses. The dimensions of these will depend upon the quantity of stock which the farmer may desire to bring up for immediate and marketable purposes. Many different plans have been adopted in the construction of such buildings; some have been well and usefully conceived, while others have been erected with more than necessary accommodation and elegance. In the latter respect none was, perhaps, more absurdly so, than that one erected by a joint-stock company at Edinburgh, about twenty-five years ago, which was ironically designated "The Cow-Palace." The speculation did not succeed, and this building stood long, a monument of extravagance and folly, not being easily convertible into any other purpose.

Perhaps the most useful and economical construction for a cow-house is one with a central wall, which should be about fourteen feet high, with a roof resting on it, sloping downwards to an outer wall of seven feet in height. The total width on each side should be about twelve feet. Each stall should be four feet two inches in width. At the heels of the cattle must be placed gangways about three feet and a half broad. The cattle should lie on wooden platforms, perforated with small round holes at their outer ends, for the passage of the urine. Urine runs should be conducted from the ends of the stalls, towards the outer wall of the cow-house, where there ought to be a receptacle for the dung being collected during the day, which should be thrown out every morning through apertures in the wall, about two feet square, at proper intervals, for the purpose. There should be a dung-pit, constructed of stone, or brickwork, for the reception of the urine, as well as the dung and litter, as the ammonia contained in the urine is the most valuable part of the manure. At about five feet apart should be a series of windows, covered with flap-boards, for giving light and air, when required. There should be a door at each end of the building, for admitting of a free current of air, as occasion requires.

Some feeders prefer a circular building, on the score of

economy; the animals standing with their tails towards the wall, which would offer facility in throwing out the dung, and the area within would answer for the purpose of feeding, and attendance upon the cattle.

The strictest attention should be paid to ventilation, and attendants should watch that the upper timbers of the house are dry, as they are liable to become damp from the condensed perspiration, and vapour arising from the respiration of the cattle.

Some experienced feeders affirm, that it is better to leave a gangway of sufficient breadth for the attendants to pass along, at the heads of the cattle, to feed them. And, if possible, troughs well supplied with running water. Where this can be obtained, there can be little doubt of its great utility.

THE FEEDING COW-HOUSE.

It has long been ascertained, that the cleaner and more comfortable cattle are kept, the better; and the utmost diligence should be employed in preserving the food as clean as possible. Upon these depend, in a great measure, their healthy condition; and consequently the sooner they will become fat and marketable. To attain these objects, Mr. Hunter, of Blackness, near Dundee, a gentleman who paid much attention to agricultural pursuits, had cow-houses constructed in so complete a style, as to answer most effectually these desirable ends. His plan was to erect a house of two apartments, an inner one for feeding the cattle, and an outer one for containing the turnips and fodder.

In wintering young cattle, it is of much importance to keep them sheltered from the wet, and in a warm situation, as they feed much better. They should be tied up in sheds or houses constructed for the purpose; and, if possible, these should be in a yard, surrounded by a wall. The cattle should be tied up in stalls; and it will be found that they feed faster than when running loose in a yard, and with much less consumption of straw and fodder.

A principal object with Mr. Hunter was, to obtain as much manure as possible, and at same time to save the urine. After the turnips are fully ripened, they are gathered together in large quantities, and the roots are separated from the leaves, with large knives, made of old scythes, or knives purposely constructed, and as much of the earth removed from them as possible, and then carried into a barn, where they are deposited for use. The cattle are first fed with the leaves, until they are exhausted, which they eat with avidity when not withered. The turnips should be as closely piled up as possible, and covered with straw, to preserve them from frost. It must be observed, that all the turnips are not removed from the ground at once, but taken up from time to time, as the leaves may be required for food. When turnips are permitted to remain in the ground during the whole winter, the green parts are rendered useless by the alternations of frost and thaw, and the turnips themselves much injured.

The feeding-house should be at right-angles with the barn; and, at about three feet and a half distance from the principal wall, there should be a series of troughs from which the cattle feed. These should be constructed of hewn pavement, which is preferable to wood. The floor should be an inclined plane, on which the troughs rest, and in the ends of each there ought to be an arched aperture for the passage of water from one trough to the other, by which means they are easily kept clean, by throwing a few buckets of water into the higher one, and the last or lower one empties itself by a spout led through the wall. By means of this arrangement, the food can be kept clean without much trouble. The cattle should be chained to stakes, situate at a proper distance from each other, and these are attached to a horizontal beam, running from one end of the house to the other, and attached to the roof by an upright support. The three and a half feet space between the beam and the wall, is intended as a walk for the men who feed the cattle, and from which they deposit the cut turnips into the troughs. To prevent the animals from choking with the turnips, the chains should be of such a length as will prevent the animal from lifting his head too high, as it is found that they are more apt to choke, when they are enabled to raise their heads much. The cow-house should have a window at both ends, to enable the men to see that no accident befals the animals.

Should any of the cattle be seen choking, the attendant must immediately apply the instrument described, with the mode of using it, at page 471, and represented on plate x. fig. 19, which ought constantly to be at hand.

In large establishments, the cattle-feeders should be on the spot night and day, and ought to have a sleeping apartment at the end of the cow-house, with a window looking into it, so that he may hear and see anything which may require his attention.

At about a foot distant from the hind-quarters of the cattle, there should be a hewn stone dung-groop and urine-gutter, so that the latter may run off as soon as it is discharged by the animal, and be conducted into the urinarium in the yard, which should be enclosed for the purpose.

There should be several vents constructed for allowing the breath of the cattle and ammoniacal gas to escape, as the inhaling of the latter is very detrimental to the health of cattle; and these also prevent too great an accumulation of heated air.

CHAPTER VIII.

THE VARIOUS BREEDS OF HORNED CATTLE.

THE SHORT-HORNED, OR HOLSTEIN BREED.

It is from this breed that we derived the best of our English cattle, which now, in most parts of the kingdom, far exceed the parent stock. They differ much from all the older British cattle in the shortness of their horns. They are wider and deeper in their form, and feed to a much greater weight than most other breeds; they yield a large quantity of tallow, and their hides are greatly finer in texture, thinner, more compact in fibre, and with a thin coating of hair.

It is not the province of a work of this kind to enter into an elaborate detail of all the methods pursued by breeders for improving their stock, which would exceed the limits of a treatise of this kind; but we shall quote the words of Mr. Beilby, who, in speaking of the improved Holstein breed, says, "We shall, however, give the general principles which have been laid down, and steadily adhered to, in the improvements of several breeds of cattle, and which have been so successfully brought into practice. The first, and most obvious, is beauty of form, a principle which has been, in common, applied to every species of domestic cattle, and, with great seeming propriety, was supposed to form the basis of every kind of improvement, under an idea that

beauty of form and utility were inseparable. But at present a distinction is made by men who have long been conversant in practice, between a useful sort and a sort that is merely handsome. Utility of form is, therefore, the next general principle, and may be considered as arising from a larger proportion of those parts which are deemed *offal*, or which bear an inferior price, should be small in proportion to the better parts. A third principle of improvement laid down by breeders consists in the fineness of the muscular parts, or what is termed *flesh*. But the great object which engrosses the attention of breeders at present, is the *fattening quality*, or a natural propensity in cattle to arrive at a state of fatness at an early age, and in a short space of time; and it appears, from observation, that beauty and utility of form, the quality of flesh, and its propensity to fatness, are principles consistent with each other, are frequently found in the same individual, and hereditary in particular lines or families of cattle. In regard to the means of improvement, it has long been an established maxim, that, to improve the breed, it is necessary to cross it with others of an alien stock, under an opinion, that continuing to breed from the same line, weakens the stock. This idea, however rooted it may have been in the minds of former practitioners, is now entirely set aside by the modern practice of breeding, not from the same line only, but from the same family: the sire and the daughter, the son and the mother, the brother and sister, are now permitted to improve their own kind; and in this way the improvement of the several breeds has advanced rapidly to a height unknown before in any age or nation."

This we may admit has been the case to a certain extent; but a limit must be put to it, otherwise, degeneracy and weakness are sure to follow, and also a train of diseases, which will become hereditary.

Crossing the different breeds throughout the United Kingdom has been so much practised within the last thirty years, that it is now difficult to say what is the origin of the cattle of any part of the country. Bulls and cows of improved breeds have been transported from one district to another to such an extent, that an almost uniform improved stock prevails throughout Britain and Ireland. These, however, are varied to a certain extent by the opinions and practice of various farmers. We must, however, peculiarize

THE KYLOE'S, OR HIGHLAND CATTLE.

This hardy and small breed is peculiar to the Highlands of Scotland, and its Western Islands. They are mostly black, their horns white, with long and rather shaggy hair. These cattle feed to a good size in proportion to the dimensions of their bodies. The flesh is well-flavoured, and the muscular fibre of a fine texture. They are much sought after by gentlemen in England, to be turned out in their parks, from the gentleness of their tempers, and the ease with which they fatten.

THE LONG-HORNED CATTLE.

This breed was formerly called the Lancashire breed, and prevailed over that county, as well as Cumberland, and Westmoreland. Of late, this breed, which was a favourite one, is so altered by the mixture of other kinds, that it is now nearly extinct.

THE GALLOWAY BREED.

The cattle of this and the neighbouring counties, have long been the polled kind. They are of medium size, generally weighing from forty to sixty stone, although some have been known to weigh seventy stone. Their form is

shorter than the Lancashire breed, and otherwise resemble them, except in their want of horns. They fatten on the most valuable parts, and their beef is finely marbled or mixed.

MILCH-COWS.

Great differences are known to exist in the quantity of milk which cows yield, as well as the quality of the milk itself.

The short-horned and galloway breeds give most milk; more cream is thrown up on its surface, and it produces a greater proportion of cheese. Some persons think the Alderney breed the best suited for dairies, as yielding a great proportional quantity of milk, and also for consuming a smaller quantity of food, while they increase faster in dimensions. The Suffolk duns are also remarkable for the quantity and excellence of their milk.

SECTION III.

DISEASES OF SHEEP.

INTRODUCTION.

The duties incumbent on the shepherd are of a most arduous kind ; and he that performs them rigidly, even with a moderate range of pasturage, will have little leisure time on his hand. Sheep are accustomed to enjoy an ample district of country for feeding, and being widely scattered, the shepherd has little opportunity of watching the condition of their individual health. Some will naturally be seized with maladies, unobserved by the shepherd, and in many instances die without being seen in some sheltered corner, where they retire for quiet, when overtaken by disease.

It is of great importance to have shepherds well versed in the different complaints to which sheep are liable, and to be able to distinguish the disease immediately on its earliest appearance. The diseases are comparatively few, and these in general well marked.

The sheep is not that stupid and defenceless animal which many suppose him. In extensive mountain ranges, where they but seldom see mankind, and where they are not

dependent on the protection of the shepherd, sheep will be found to assume a very different character. Rams and wedders have been known to attack a single dog, and in general are found more than a match for one of ordinary strength. But when danger of an imminent kind presents itself, the whole flock assume an attitude of defence,—forming themselves into a compact body, with the females and young in the centre, the males place themselves in the front, and, keeping close to each other, boldly wait the attack ; and when their enemy has approached within a few yards, the rams dart upon him with such impetuosity, as to lay him dead, unless he takes to flight, and thus eludes their vengeance. Dogs and foxes have no chance of breaking their ranks when thus formed.

CHAPTER I.

DISEASES OF THE HEAD, ETC.

STAGGERS.

Symptoms.—This malady has a variety of names applied to it, as indicating various diseases, namely, *sturdy*, *goggles*, *fernsick*, and *hydrocephalus*, or water in the head; but they are in fact only one.

The staggers is a disease which more particularly attacks young sheep or hogs, from a year to eighteen months old. Sheep that have died of this disorder, on their skull being opened, a collection of water has been found between the skull and brain, and even sometimes in the ventricles of the brain.

The first symptom which manifests itself, is the sheep lagging behind its companions in the pasture ground, and assuming a dull, sluggish appearance. Then the animal will be noticed to go round, as if giddy; its eyes look as if they were blind; and ultimately he dies. But all these symptoms may be apparent for a considerable time before death ensues. Sheep labouring under this complaint often feed well to the last, and die in good condition.

Causes.—One form of this disease proceeds from an overabundant supply of that fluid which moistens the ventricles of the brain. This is considered incurable. The more common state proceeds from a species of worms, called hydatids. These animals are formed like bags or cysts, and are filled with a fluid. They do not inhabit the substance of the brain, but lodge between it and the skull. It is by the pressure of those cysts that this malady is produced, and which generally terminates fatally, and the brain becoming diseased from being subjected to a long continuance of that pressure.

Remedies.—The celebrated poet, Hogg, better known by the name of the Ettrick Shepherd, discovered one mode of curing the species of disease which is caused by hydatids. His plan was to thrust a knitting-needle up the nostril of the animal and force it through the skull, into the cyst, which destroyed the hydatid, and the sheep then recovered its usual health.

In cases where a portion of the skull becomes soft, it is penetrated by a common awl, which permits the water to escape, and a cure is effected. Care must be taken not to pierce the substance of the brain by forcing the awl too deep. Trepanning has been recommended, and successfully performed by some veterinary surgeons. It is, however, too delicate an operation to be attempted by unskilful hands, and should therefore be entrusted to no one but a regular veterinarian. The animal must be properly secured, and placed in such a position that the part to be operated on should lie convenient to the hand. An incision of an inch and a half in length is made through the skin, which is crossed by another at right-angles to it. The soft portion of the skull is now divided in the same manner as the skin. The cyst will then be visible; the skull is then turned back, and the cyst taken hold of by a pair of forceps, and moved gently backwards and forwards until it is loosened from the brain. Should any difficulty present itself, the operation may be facilitated by the assistance of a crow-quill, or a very thin slip of whalebone. The sheep must then be prevented from breathing through the nose, and by stopping the breath and pulling the cyst alternately, it will be easily extracted. When this has been effected, the parts of the skull must be brought together, and crossed by slips of adhesive plaster. Remove these in two days, and wash the part if any matter appears, and dress it in the same manner. Two or three dressings generally effect a cure.

Mr. Rhind, Surgeon, Edinburgh, describes, in the first volume of the "Edinburgh Journal of Natural and Geographical Science," a species of worm, which was found in the frontal sinus of a sheep; but is unable to account for the animal being found in such a cavity. It belongs to that genus of worms called, *Pentastoma*, and may be specifically termed *ovis*. We have given a representation of this worm on plate xiii.: fig. 1, the worm the size of nature; fig. 2, the head magnified; fig. 3, the point of the tail; fig. 4, a cross-section of the body, showing the intestines.

BLINDNESS.

It may naturally be supposed that this malady subjects the animal to the risk of accidents, and consequently such as become blind should be fed in an enclosure where there is no inequality of ground.

Cause.—Blindness is frequently induced by removal from warm and sheltered localities to such as are exposed to cold winds and storms. Moist situations are also apt to produce blindness. Extreme heat has also the same effect, especially in the dog-days. Poor feeding is likewise instrumental in producing blindness; and that peculiar condition of the atmosphere, generally denominated blight, produces an affection similar to what is called sty, upon the human eye.

Remedies.—The eye being an extremely delicate organ, cures should only be attempted by a veterinary surgeon. The ointment made from the nitric oxide of mercury, drawn across the eye-ball by a camel-hair pencil, or a feather, will frequently effect a cure; and the common mercurial ointment has been found beneficial.

CATARRH.

Symptoms.—The discharge of a purulent fetid matter from one or both nostrils, the membrane excoriated, accompanied by dulness, and the wool parting easily from the skin, together with want of appetite, are symptomatic of this malady.

Cause.—Subjection to wet or boggy layers in cold, wet weather, or during wind, as also exposure to damp situations during snow, are apt to produce catarrh. There can be little doubt but the disease is contagious, as it has been frequently observed, that when one animal has been seized with the complaint, others soon become infected.

Remedies.—The following preparation has been found an effectual cure if taken in time:—

Gum-guaiacum . .	$\frac{1}{4}$ ounce,
Camphor, finely powdered	$\frac{1}{2}$ drachm,
Tartarized antimony .	$\frac{1}{4}$ ounce,
Fennel-seeds, powdered	$\frac{1}{2}$ ounce,
Mithridate . . .	$\frac{1}{2}$ ounce;

to be made into a ball with treacle.

CHAPTER II.

DISEASES OF THE CHEST.

THE ROT.

Symptoms.—The name rot has been given to many diseases, which are, however, widely different in their character. But this complaint is a distinct malady, exhibiting characters peculiar to itself. The lungs, liver, and whole system are affected, and water is generated in the abdominal cavity. The chief seat of the malady seems to be the liver, which is always found in a diseased and decomposed state; and a species of worm, called the fluke-worm, is found lodged in its substance. The sheep invariably falls off in flesh, which also becomes flabby; the eyes are heavy and dull, and the animal appears stupid, and is oppressed by slow fever. The gums and tongue are of a livid hue; and the breast loses its fine rosy colour; the breath is fetid, and the teeth become loose. The wool parts from the skin easily, and in some instances the animal scours.

Causes.—Sheep that are fed upon dry, and especially mountain land, are seldom subject to this malady. On the contrary, it has been ascertained that those fed on low, wet pastures are liable to be attacked by this complaint. Bad food has also been noticed to produce the rot. It has been especially remarked to affect sheep brought from hill-pastures to those which are damp and luxuriant, for the sake of speedily fattening them. It is quite evident that the constitution of the sheep is adapted to pasturage of a dry, rather than of a succulent nature; and experience has shown, that in mountain districts the rot is comparatively of rare occurrence. Sheep which are afflicted with this disease suddenly lose condition, even although they feed with their accustomed appetite and regularity. It is an ascertained fact, that rank grass invariably produces the rot in sheep, and seems to act as a kind of poison to them. The effluvia arising from marshy ground in summer is said to generate this complaint. But whether the exhalations or the moist rank food is the cause of it, is not yet known to a certainty. One fact, however, is certain, namely, that where sheep feed on salt-marshes, the complaint never occurs; and in Lincolnshire sheep pastured in such localities are uniformly well fed, and in most excellent condition, and bring high prices.

Remedies.—Numerous prescriptions have been given for the cure of this destructive complaint. But when taken at first, it is comparatively cured without much difficulty. The first object is to rid the stomach and intestines of their pernicious contents, by administering purgative medicines; for which purpose let the following laxative be given, by means of an elastic tube, with a funnel-shaped cup at the extremity:—

Epsom salts . . .	2 ounces,
Warm water . .	1½ gill.

When this has operated, give the following stimulant which will generally effect a cure :—

Powdered ginger . .	¼ ounce,
Powdered gentian .	¼ ounce ;

to be made into a ball with lintseed-flour and treacle. The food must likewise be changed to that of a dry and wholesome nature.

The following specific has proved effectual in bad cases—to be made into a ball with treacle :—

Antimony . . .	¼ ounce,
Camphor, ground . .	1 drachm,
Oak-bark, ground . .	1 drachm,
Laudanum . . .	20 drops.

The above to be given every second day, until a cure is effected.

Blue mercurial ointment, the size of a nut, rubbed on the skin in the region of the liver, every day for a week, has been known to cure the rot, taking care to give the animal wholesome food at the same time.

Where persons are compelled to feed sheep on low, moist pasturages, they should be invariably taken to a high situation when they have filled their stomachs, and for the evening repose. They should never be allowed to lie down on wet ground.

INFLAMMATION OF THE LUNGS.

This complaint is most common in lambs, and occasions a short, hard cough. Whenever this is observed, give the following specific, every day, until the cough is subdued :—

Tartarized antimony .	1 drachm,
Lintseed-tea . .	4 ounces.

GRASS-ILL.

Grass-ill, is a disease which affects lambs from three weeks to a month old, and is caused by eating grass before the stomach is properly habituated to it, and no doubt from indigestion. It is most rapid in its progress, and speedily terminates in death, if not promptly attended to. The following should be given whenever the animal exhibits a languid dejected state :—

Castor-oil . . .	1 ounce,
Tartarized antimony .	1 drachm,
Infusion of gentian-root .	½ gill ;

to be administered with the flexible tube funnel.

MILK-ILL.

Symptoms.—The animal exhibits a dull appearance, with the ears spread and hanging on either side of the head, instead of standing up in the ordinary manner.

Cause and Cure.—This complaint is one affecting lambs, and follows weaning, and is probably owing to indigestion, and acids generating in the stomach. It is nearly akin to grass-ill, and we are not aware of any other remedy than the one recommended for that disease. When they are affected with scouring, from twenty to thirty drops of laudanum may be given with effect.

JAUNDICE, OR YELLOWS.

This complaint is not a common one amongst sheep. It manifests itself by the white of the eyes assuming a greenish yellow cast, and their skin being of a yellow tinge all over. This disease, as in other animals, is caused by a diffusion of the bile over the different parts of the body, in conse-

quence of too great a secretion of it taking place in the true stomach. Give the following specific :—

Salt of tartar . .	1 drachm,
Epsom salts . .	½ ounce,
Bitter infusion . .	1 gill.

The following has also been found effectual in removing the complaint :—

Calomel . . .	3 grains,
Jalap . . .	1 drachm.

CHAPTER III.

DISEASES OF THE ABDOMEN.

THE RESP, OR RED-WATER.

Symptoms.—The beginning or end of winter are the times when this complaint makes its appearance. It is less common in higher mountain ranges, but pretty frequent in lower situations when hoar-frost prevails. Where sheep are put under cover during the night, they always escape this malady, which manifests itself by an inflammation of the skin, and induces blisters, filled with a thin watery fluid, of a reddish colour. These first appear about the breast and belly, which is generally distended. After a short time they break, and the matter flows from the blisters, which, when fully discharged, are soon covered by a blackish scab. It is a disagreeable disease, but seldom proves fatal. Sheep affected with red-water become melancholy, and are usually seen lagging behind their fellows while feeding, and may be observed poking out their heads in an awkward manner, and soon afterwards a discharge of saliva takes place from the mouth, and accompanied by swelling of the belly.

Causes.—Cold and wet are the chief sources of this complaint, as well as many others in sheep. The skin being fretted by the wet, watery blisters rise on it. Sometimes, however, the animal is affected with internal cold, which produces a slight febrile attack, and causes these watery vesicles to appear on the skin, and are similar to the eruptions which are produced about the mouth and face of many individuals when they have caught a severe cold. This affection has but little influence on the blood, although a small portion of it finds its way into the vesicles under the skin, and produces that red tinge to the thin glary matter of these little blisters, from which the name of the complaint is derived.

Remedies.—The first thing to be done when the disease is violent, is to remove the animal to a place by itself, take a small quantity of blood, and then the vesicles should be laid open by means of a small knife, scalpel, or lancet; after which let each of them be well washed out with an infusion of tobacco. Afterwards administer the following for three or four successive mornings:—

Sulphur, in powder .	2 ounces,
Treacle, or syrup . .	3 ounces,
Nitre . . .	½ ounce;

to be made into six doses, and given them in the form of a ball, or in half-a-pint of water, a little warmed. On the seventh morning give the animal an ounce of Epsom salts; and on the following or next day, wash the whole parts affected with lime-water, and the sheep may then be considered as cured.

THE RED-WATER BLIBES.

Symptoms.—This disease is so similar to the preceding, that there is no visible distinction in their appearance; but they differ entirely in their origin, the latter being caused by the animal feeding on succulent grasses or on turnips, which induce an inflammatory state of the system. This complaint attacks sheep which are quite healthy and in high condition, and not unfrequently carries them off in a day; for besides the external appearance, the whole internal organization is affected.

Remedies.—Copious bleeding must be first had recourse to, and a pint may be taken with benefit. After which, from an ounce to an ounce and a half of Epsom salts should be given to clean out the bowels effectually. Then give on the two following days a cooling draught, viz :—

Tartarized antimony .	1 drachm,
Cream of tartar .	2 drachms;

to be made up in a ball with treacle.

THE BRAXY, OR SICKNESS.

Symptoms.—This is above all others the most insidious and rapidly fatal malady to which sheep are liable. Before any symptoms manifest themselves, the animal is suddenly overtaken with the complaint, while feeding and apparently in perfect health, when he will start, and instantly fall down lifeless. If opened immediately after death, it will be found that the stench emanating from the carcase is quite intolerable, caused by the putridity which has affected the entire internal parts.

In some instances there are premonitory symptoms, by which it may be guessed that this complaint is making progress in the animal's system, as he seems uneasy and restless, lying down and rising up frequently, and sometimes standing with his head down and his back raised; and when forced to run, he manifests pain by his awkward action, and gradually ceases to feed with his usual regularity, and drinks frequently. The eyes have a watery appearance, and the eyelids are half closed, with considerable inflammation of the eyeballs. The mouth, tongue, nose, and skin become dry and parched; the pulse becomes strong and quick, and the breathing rapid and difficult. Inflammation is going on, and considerable pain must be felt, terminating in mortification, after which, as is usual under such circumstances, the pain subsides, and the animal will frequently commence feeding with his usual avidity; and thus persons who have not attentively watched the progress and symptoms are deceived, and the animal dies when they little expect it.

Cause.—Cold, wet weather will have the effect of producing inflammation of the bowels, and thus lay the foundation of the disease. Costiveness is also supposed to occasion it; or it may arise from drinking cold water, when the animal is much overheated; from being washed in cold water when very warm, or any other sudden change of temperature.

Remedies.—Bleeding is the first thing which must be had recourse to after it is suspected this disease is coming on, which of itself will frequently have the effect of checking it. From half-a-pint to a pint may be taken. This should be followed by an ounce of Epsom salts, dissolved in a pint and a half or a quart of cold water, and given in two doses. The lower intestines being generally constipated on the approach of this disease, it will be found beneficial to assist the purgative by a clyster of warm broth or gruel, with an ounce of butter or lard melted in it. Give the following

Drench from Octr. 12/55
Sp: Tereb., Sp. Nit. Æther, Ol.
Petrol., Ext. Belladonnae, et
Ol. Lini. Pour a small quantity
also in the nostrils -
The following day put them
into a close house & fumigate
them with burnt Sulphur,
Petroleum & turpentine; using
with it some Chlorine Gas.
My method of disengaging the
latter is by mixing together in a
Basin, Plumbi Rubr., Sodii Chloride,
Acid Sulph, & this kept well
stirred with a stick will give
off a sufficient quantity of
Gas. Repeat the fumigation every
3d. day for a fortnight -

three times a-day, until symptoms of recovery are apparent :—

Nitre, ground into a fine powder, 1 drachm ;

made into a ball with treacle and linseed-meal. If the feverish symptoms still remain, it will be necessary again to have recourse to bleeding. It will be found of much importance to sprinkle the animal's food with salt. The food should consist of cut grass or turnips ; and if the complaint attacks the animal in the winter, green food should be occasionally given, if possible.

DIARRHŒA, OR LOOSENESS.

Symptoms.—This disease and dysentery have frequently been confounded, although they are sufficiently different in their characters. Diarrhœa consists in an unusual discharge from the mucous vessels of the intestines, and is always accompanied by pain, gripings, and frequent stools, but unaccompanied by fever ; nor is there any blood or slime : it almost always occurs in the spring ; weak sheep and hogs being most liable to its attacks. In this disease there is only a temporary or partial wasting of the flesh, while in dysentery a rapid diminution of the muscular fibre takes place. It frequently improves the general health of the animal.

Cause.—Sudden changes from poor to rich pasturage ; and bad food will induce it.

Remedies.—It is not prudent to stop this disease too rapidly ; but it is equally wrong to allow it to continue too long, as, if the discharge is either too long continued, or the purging very copious, it brings on great debility. If caused by change from dry to moist food, then it will be proper to resume the dry feeding for a time, which will generally effect a cure within a few days.

If a change of food does not prove effectual, give the animal half-an-ounce of prepared chalk in a pint of cow's milk, slightly warmed. If the purging has not been subdued by this, it may be repeated on the second day. If the discharge is very great, and accompanied by symptoms of pain and straining, two drachms of rhubarb may be given as a first dose, and chalk as a second. If this has not the effect of relieving the animal, then from twenty to thirty drops of laudanum may be given with advantage, and afterwards the chalk, as above recommended.

DYSENTERY.

Symptoms.—This complaint is distinguished from the last disease by being always accompanied with fever, and other symptoms of an inflammatory condition of the intestines, whereas diarrhœa is generally a state of simple irritation or weakness of the bowels. In dysentery there is great pain, frequent gripings, especially when at stool; the matter discharged is in hard balls, accompanied by mucous blood, and often purulent matter from the bowels. Sheep affected with dysentery have generally the wool clapped, with a languid expression of eye, the mouth dry, and rough skin, with a greatly accelerated pulse. When the disease is in an advanced state, the fæces are very black and fetid. The animal eats very little, and is rendered incapable of ruminating. This complaint frequently ends fatally.

Remedies.—The treatment of dysentery should be commenced with blood-letting, in greater or less quantity, according to the condition of the animal and the severity of the disease. Mild laxatives should be persevered in, and emollient injections, until symptoms of recovery become manifest. After bleeding, give the animal from twenty-five

to thirty drops of laudanum, and in a few hours followed by a drachm of rhubarb, with half-an-ounce of prepared chalk, mixed in a pint of warm milk. This to be continued until the sheep recovers. The food should be sprinkled with salt. Hay and turnips should be given to him during the continuance of the malady; a quarter of an ounce of tincture of terra-japonica may be given with advantage on the second day after the bleeding. Let it be administered in warm milk.

COLIC.

It not unfrequently happens after sheep-shearing, that they are affected with flatulent colic, when the weather is cold and damp. They roll much about when seized with the complaint, and are considerably swelled.

Remedy.—Two table-spoonfulls of the following mixture, given twice or three times at intervals of an hour, will generally prove effectual :—

Compound tincture of senna,	6 drachms,
Spirit of nitre . . .	1 ounce,
Tincture of rhubarb . .	6 drachms,
Laudanum . . .	6 drachms,
Water . . .	1 quart.

PINDING.

This is a complaint with which lambs are afflicted, generally when very young. The fæcial discharge is of a thin, glutinous consistence, which has the effect of making the tail adhere to the anus, effectually interrupting the passage of the dung, and proves most injurious to the lamb, sometimes causing its death. This is, however, completely prevented by docking the tail a day or two after birth.

This disease, which consists of pretty copious purging, will be alleviated by the following prescription :—

Laudanum . . .	20 drops,
Ground ginger . .	$\frac{1}{2}$ drachm ;

made into a small ball with lintseed-meal and treacle, and forced down the animal's throat.

* * *

CHAPTER IV.

DISEASES OF THE EXTERNAL PARTS, ETC.

SCAB, OR ITCH.

Symptoms.—This troublesome, infectious, and destructive malady is analogous to the itch in the human being, and the mange in horses and dogs. As soon as a sheep has caught the complaint, it rubs itself against every object which it meets. It will even tear off its wool with its teeth. The skin emits a peculiarly sickly smell, and presents a red, fretted appearance, which in a short time hardens into scabs all over the body. This disease is highly contagious, so that when one is discovered to be affected, the whole flock should be carefully examined, and those in which the slightest indications are manifested should be separated from the rest, otherwise the entire flock will catch the complaint. But even here the assiduity of the shepherd must not terminate, as it will be necessary to go carefully over the flock for three or four days successively, as some of them may have caught the malady, although it has not become apparent at first.

Remedies.—A variety of means have been adopted for the cure of this disease, and it has been remarked that sheep which have been smeared seldom or ever are attacked by it. No other specific has been found so effectual as preparations of mercury ; and it may be eradicated by external applications, unless it has become constitutional; and when this is the case, internal remedies must be resorted to. The following ointment has been found an excellent remedy :—

Strong mercurial ointment	6 pounds,
Spirit of turpentine .	3 gills,
Hogs' lard, tallow, or butter	6 pounds.

The hogs' lard, or butter must be first melted, and poured over into a vessel ; then add the mercurial ointment, stirring them well together until properly incorporated, and all cloudiness disappears, when the mixture will be of a uniform pale grey colour. The turpentine must then be added, and the whole stirred together until the ointment is thoroughly mixed, and then pour it into a large flat dish, that it may cool rapidly, so that the mercury may not sink to the bottom, to prevent which the mixture should be stirred until cold.

The following preparation has also been found effectual, and is considerably cheaper than the preceding :-—

Corrosive sublimate, finely powdered . .	8 ounces,
Train-oil . . .	6 gallons,
Resin	2 pounds,
Tallow . . .	2 pounds.

Let the corrosive sublimate be put into a vessel with a pound of the tallow, and when warm, let them be well stirred together, and then the rosin added, which, when melted, will keep the corrosive sublimate suspended. When these are well incorporated by means of stirring, the remainder of the tallow should be added; and when thoroughly mixed, put in the whole of the oil, and after being well mixed let the salve be poured into a flat vessel to cool; or it may be allowed to remain in the vessel in which it was melted: in either case keep stirring the mixture until cold.

If the weather is warm, the preparation may be found too thin; to obviate this, add an additional quantity of tallow and resin. This ointment is applied in the same manner as the smearing preparation, commencing with a line along the back, and one on each side, one down all the legs, and on the centre of the belly, as well as the inside of the thighs, and both sides of the neck. Unless the weather is cold, the wool should be shorn previous to the use of any of the above appliances, and the whole skin well washed with soda and water, or strong soap and water, with a soft shoebrush, and after the animal is perfectly dry, the ointment may be then applied over the whole body. If after the application of either of the above ointments, the disease seems to spread, or if it is cured in one portion of the skin, and breaks out in another, it may then be inferred that the complaint has assumed a constitutional character, in which case it will be necessary to give internal remedies. The following specific will have the effect of curing the disease:—to be administered once a day for a week:—

Sulphur	1 ounce,
Antimony . . .	1 ounce,
Purified nitre . . .	1 ounce;

to be made into three balls with lintseed-meal and treacle.

After the ordinary process of shearing, if the sheep were anointed with a very weak preparation of the above ointments, it will have the effect of keeping off the scab and other cutaneous diseases.

It will require great caution in the application of these ointments, taking care that too great a quantity is not used, because it may bring on salivation, and consequently endanger the life of the animals; as many have died out of a flock which have been anointed with these mercurial preparations. Instances have occurred where nearly the half of flocks have been salivated, while the other portion exhibited no such symptoms. This may be accounted for in two ways: first, by the shepherd having been too liberal in the application with those which are so affected; or the salve may not have been properly prepared, from want of attention to the stirring of the ointment until cold, and consequently a greater proportion of the mercury falling to the bottom, and thus rendering it unequally charged with this substance.

When the animals are salivated—which will be seen by saliva issuing from the sides of the mouth, and the teeth becoming loose, then the following prescription must be given, which will counteract the destructive effects of salivation; two table spoonfuls to be given every twelve hours, until a change takes place:—

Sulphuret of potass . .	1½ ounce,
Wine steel . . .	6 ounces.

In cases where the disease has not gained an ascendancy, let the animals be shorn and well washed with a strong solution of soda, applied by a soft shoebrush; and when dry, rub off the scabs and scurf with a dry shoebrush. Then anoint them with the following preparation, which is less hazardous than mercurial preparations:—

Hogs' lard . . .	1 pound,
Flower of sulphur . .	6 ounces,
Spirit of turpentine . .	4 ounces.

Melt the lard over a slow fire, and then add the sulphur, which should be well incorporated by stirring; and when emoved from the fire let the turpentine be mixed with it, and continue stirring it until cold.

PELT-ROT.

This is a complaint caused by the animals which are in low condition lying in wet commons, woods, or copses, with their fleeces soaked with rain, and the debilitated condition of the sheep producing low spirits and inactivity, so that it does not shake itself. This produces a relaxation of the action of the vessels of the skin; and consequently the wool falls off, leaving large patches of the hide bare. Scanty and poor pasturage will also induce this complaint; and it is sometimes caused by a sudden transition from poor to rich pasturage.

When this disease is noticed, the animal should be removed to a warm straw-yard, and fed upon diet of a nourishing kind, such as mashes of malt and oatmeal, mixed with pea-meal; and also give him cordial draughts.

ERYSIPELAS, OR WILD-FIRE.

Symptoms.—This is an affection of the skin, and is extremely contagious; and if not attended to will quickly spread over the whole flock. The skin becomes very red, and considerable inflammation prevails, but differs from red-water, in never blistering. It is caused by some peculiar condition of the atmosphere, and generally appears in August and September. It seldom, however, continues more than eight days at a time, although sheep which have been affected with it are liable to a relapse. In some seasons the disease proves very fatal to sheep.

Remedies.—Cooling medicines, such as antimonial preparations, are useful in this complaint. Give a dose of from one ounce to one ounce and a half of Epsom salts for three

days successively, after half-a-pint of blood has been taken from the animal. Then let half-an-ounce of purified nitre be given for two days thereafter, when generally a cure will be effected. Sir George Mackenzie recommends the salts and nitre to be given in a cold state, which he says will prove more powerful, and more beneficial. The parts which are most inflamed should be washed with goulard-water, to cool them.

CRAMP OF THE LEGS, OR WOOD-EVIL.

Cold is the cause of this complaint, which suddenly seizes sheep, and renders them incapable of walking, by partially paralysing the action of the nerves of the limbs.

Remedies.—A teaspoonful of mustard given night and morning for some days has been found to restore power to the limbs, while they are rubbed twice or thrice a day with strong camphorated spirit of wine, mixed with about a fourth of that quantity of spirit of turpentine. This is applied with a flannel rubber. Let the animal be kept very warm, and the following prescription given twice a day :—

Ground cinnamon . .	1 ounce,
Caraway-seeds, ground .	1 ounce,
Lintseed-meal . .	1½ ounce ;

to be made into six balls.

LEG-EVIL.

This is a complaint in which the legs are liable to considerable swelling, which sometimes ends in mortification and death. Sheep which are attacked by this complaint should be immediately taken into the house, and their legs well washed with soda and water ; and after they are quite dry, let them be properly anointed with citric or nitric ointment When the swelling suppurates, it should be dressed with tar-ointment, and a rag rolled round it, and the anointing to be repeated every second day.

FOOT-ROT.

SYMPTOMS.—The earliest symptom of foot-rot is lameness, after which a fetid discharge issues from between the claws, and soon afterwards proud-flesh makes its appearance ; and this is followed by a gangrenous or cancerous aspect of the fleshy portions of the foot.

CAUSES.—Wet, cold pasturage, is one of the chief causes of this complaint ; and if the sheep are removed to a distance when the horn is still soft, the effects of travelling on a hard road is almost certain to cause the rot. It is sometimes produced in a sheep-house, where a number of suckling ewes are kept, from the heating nature of the dung, if not frequently cleaned out. Sheep which are afflicted with this disease frequently feed as well as when in good health ; but notwithstanding this, they seldom thrive, and often rapidly lose flesh, and more especially their fat, which no doubt is caused by the copiousness of the discharge.

REMEDIES.—As soon as sheep are observed to go lame, the feet should be inspected, and if affected with this disease, the horn should be pared away, so as to permit the matter to escape. Caustic remedies are found the most effectual in foot-rot. Three recipes have been recommended as efficacious in this disorder ; these are as follows :—

NO. I.—MILD RECIPE.

Sulphate of copper . . 2 ounces ;

dissolved in twelve ounces of water.

Strong sulphuric acid . 2 drachms ;

to be applied with a sponge or feather to the proud-flesh.

NO II.—STRONGER RECIPE.

Verdigrise, powdered	1 ounce,
Nitrous acid	2 ounces,
Water	6 ounces.

NO. III.—STRONGEST RECIPE.

Red nitrate of mercury	1 ounce,
Nitrous acid	2 ounces,
Spirit of wine	4 ounces.

The nitrated mercury should be first dissolved in the acid, and then the spirit of wine should be added; to facilitate the decomposition of the nitrate, add a teaspoonful or two of pure water, as frequently no action and decomposition will take place without water being added.

After these appliances have been repeated twice or thrice, it will be found that the flesh assumes a more healthy aspect; the parts should then be healed by an application of tincture of myrrh, or Friar's balsam. But should a discharge continue to flow from the parts, they should be carefully washed with a weak solution of soda, or Goulard's extract. The animals must be kept in a dry situation until the feet are perfectly healed.

The treatment pursued by that enterprising agriculturist, Sir George S. Mackenzie, is first to administer a dose of Glauber's salts, from one to two ounces, according to the size of the animal. Then the ulcer is laid open, and cleaned and washed with a weak caustic ley of potash or soda, and then filled up with scraped linen, steeped in Goulard cerate. This dressing to be continued every evening, until the granulations of the healing process become apparent. If ulceration continues, then the part may be again washed with caustic ley. When the hollow part caused by ulceration is tolerably well filled up, a dressing of cerate may be applied, after which it will soon heal, in most instances. Sometimes, however, the flesh grows too rapidly and in too great a quantity; which must be checked by a mixture of red precipitate and burnt alum dusted upon it. When the discharge has changed from a green hue to a yellowish-white, it may then be assumed that the parts are healing; and they should be brought together at the edges by gentle pressure, and kept so by adhesive-plaster; but care should be taken to leave free egress for the matter if it still continues to flow. To keep down the swelling the lower portion of the limbs may be washed with vinegar.

VERMIN.

Sheep are liable to be infested with various kinds of vermin, especially those that are lean and out of condition, as well as the young animals. Various kinds of insects deposit their eggs in the skin of sheep, which produce little tumours. These are the receptacles of the grub or maggot, after the eggs are hatched. The insects which lay their eggs in the skin of animals are provided with an instrument called an ovipositor, with which they penetrate the skin, and at the same instant they deposit their eggs. The tumours produced by the grub after it is hatched create considerable uneasiness to the sheep; and when a single sheep has several of these in his hide, he will seldom feed well, from the constant irritation produced by the motion of the grub. The shepherd, when he sees this uneasiness manifested, should search for the tumours, and pick out the grubs with a pin, or squeeze them out with his thumb-nails, as there is always a small aperture on the surface of the tumour through which the grub escapes in due season.

The sheep-tick, called *hippobosca ovina*, is also very

troublesome to sheep and lambs, especially before they are smeared.

Remedies.—When the former of these vermin infest sheep, the flowers of sulphur mixed with hogs' lard, and rubbed over the fleece, generally has the effect of preventing insects from alighting on them for the purpose of depositing their egg. A solution of aloes, spirit of turpentine, and black soap have also been successfully used for this purpose. Strong, colourless spirit of tar has likewise the effect of preventing flies from alighting on sheep. It also destroys the tick. A solution of corrosive-sublimate has the property of extirpating flies.

WOUNDS.

We have already given directions concerning the treatment of wounds, which is alike in all quadrupeds. But we must remind our readers that the application of greasy substances to a fresh wound makes it ulcerate, and become a sore, and consequently Friar's balsam, or tying or bringing the sides of the wound together by means of adhesive-plaster, will in most cases prove the best remedy. We would therefore recommend the shepherd to have always at hand a piece of adhesive-plaster in case of need ; and he should have a bottle of Friar's balsam, or the following preparation in his possession, which will answer equally well in fresh wounds :—

Saltpetre, finely ground .	1 ounce,
Spirit of turpentine . .	2 ounces,
Opodeldoc . . .	4 ounces.

When sheep are bitten by that species of snake called the viper, or adder, the wound being so small it is seldom known until considerable swelling has taken place, in consequence of the poison entering the system. The only specific which we know in such cases is to administer doses of castor-oil to the extent of from three quarters of an ounce to an ounce and a quarter. Half-an-ounce of hartshorn, mixed with water, has been also found effectual in allaying swelling produced from the bite of the viper.

FRACTURES.

When bones get fractured in sheep, if in the limbs, the ends of the bones should be placed in contact, and splints of wood placed round the part, firmly bound together by means of a bandage an inch and a half in breadth; and where this cannot be conveniently procured, broad tape may be substituted, which should be replaced as soon as a proper bandage can be had. A piece of pasteboard will also answer the purpose of splints. The bandage should be wound round in a spiral direction. The splints will require to be worn for about fourteen days, when they may be removed, and the bandage alone worn, until the leg has acquired sufficient strength. If the limb swells considerably, the bandage must be slackened, and again tightened when the swelling has subsided. If the fracture is compound, that is, in more than one piece, the safest thing is to destroy the animal immediately, as there is but little chance of a recovery under such circumstances.

OF BLEEDING.

The best and easiest mode of bleeding a sheep is to open the large vein which passes over the cheek. This vein can be readily felt, by pressing the finger on the edge of the lower jaw-bone, where its trunk passes over, and from thence its greater branches emanate, and spread over the cheek about two inches from the corner or angle of the jaw, nearly opposite to the third grinding or molar tooth. When

blood-letting is to be performed, the operator must hold the sheep between his limbs, with the croup placed against a wall to prevent him from getting backwards. Place the left side of the jaws undermost, and seize the lower jaw in such a way that the fingers come upon its right side, so as to press above the trunk of the vein a small way below where the lancet is to be inserted. Make an incision obliquely across the vein, where the trunk is largest, which we have marked by letter *a*, plate xiii. fig. 4. This will be distinctly felt through the skin. The pressure prevents the flow of blood beyond the spot where the finger is applied, and consequently must pass through the opening, as it can find no other course. The oblique incision is found to answer better than one made along the course of the vein, or directly across it. To prevent the vein from shifting while the lancet is inserted, it should be pierced as near to the point of the finger as possible.

In our figure above referred to it will be seen that the trunk of the vein passes from under the lower jaw at *b*, and that its branches go along the soft portion of the cheek. At *c* a small nerve takes an opposite course, passing over the vein, and in bleeding care should be taken not to divide it. Under this nerve there is a thick, fleshy muscle, which is called the *zigomaticus major*, whose office is to take a principal part in moving the jaw during mastication. The letter *d* marks the situation of another much thinner muscle, beneath which the branches of the cheek-vein pass, and lead to the corner of the mouth, and assist in giving motion to the lips.

ON THE AGE OF SHEEP AS INDICATED BY THE TEETH.

The sheep, as well as all the other ruminating animals, is destitute of the upper fore, or cutting-teeth, which are also termed the incisors, but is furnished with eight cutting-teeth in the lower jaw.

At two years of age two of these drop out, and are replaced by other two. At three years old four of them are renewed, and the others at the age of four years.

The teeth undergo considerable changes between the first and eighth years, which we have delineated in plate xiv., so as to enable persons to judge of the age of sheep by their dentition.

Fig. 5 2 exhibits the appearance of the teeth at one year old. Their cutting, or outer edges form a crescent-shaped line, the teeth being nearly all of a similar breadth, almost flat, and very smooth on their outer surface, and considerably concave internally.

Fig. 3 6 shows their aspect at two years of age, in which the two central teeth are considerably broader than the others, with the cutting edge not nearly so much arcuated as at two years.

Fig. 7 4 represents the structure of the teeth at three years, from which it will be observed that the four central ones are considerably broader and longer than the other two on each side, which rather suddenly shorten, the external teeth being shortest and narrowest: the cutting edge of the four central ones is but slightly curved.

Fig. 5 8 characterises the teeth at four years, and shows that the six central ones are nearly of uniform breadth and length; their cutting edge being but very slightly curved, the external tooth on each side being materially shorter than the others. The whole of the teeth are much stronger than in any of the preceding years.

Fig. 6 9 shows the structure of the teeth on the fifth year. It will be observed that the whole eight teeth are nearly straight on their cutting margin, and that there is but a

small difference in their breadth, and they almost gradually diminish from the centre to the sides. The basal range above the gums is also nearly parallel.

Fig. 10 shows the character of the teeth on the 6 & 7 ~~seventh and eighth~~ years, when the general length and breadth continue nearly as in the fifth and sixth years; but the two central ones are generally considerably worn down, or broken, as exhibited in our figure, and frequently dark-green, or brown, at their base above the gums, and their hue rather yellow

CHAPTER V.

GESTATION, PARTURITION, &c.

THE RAM.

Of late years much attention has been paid to the form of the ram from which to breed, as well as the quality of his wool, fleeces, and other properties which experience has shown to be the most appropriate.

The head should be fine, and rather small than otherwise; his eyes large and prominent, ears thin, his nostrils wide and expanded, his collar full from the breast and shoulders, but gradually tapering from the junction of the head and neck, and the latter of a graceful and gentle curve, without any appearance of hanging skin underneath; the shoulders broad and full, and joining smoothly to the collar forward, and to the chine backward, without permitting a hollow in either situation; the muscle upon his arm or fore-thigh must swell boldly from its superior part to the knee; the legs straight with a clean and fine bone; the knee must not have any loose skin about it, and the hair from thence, as well as from the hough downwards, without long or coarse hair ; the breast broad and well-formed, and his fore-legs placed at a proper distance from each other ; his chest of considerable girth, full, and deep, free from any hollow between the shoulders, and the fore-flank quite full ; the back and loins broad, flat, and straight, with the ribs finely arched ; his belly straight, and the quarter long and full, furnished with ample muscle down to the hough, which should be nearly straight ; the junction of his thighs deep, wide, and full ; the entire body should be covered with a thin pelt, and thick, with fine, bright, soft wool.

There can be little doubt but the above is an excellent and graphic description of a well-formed ram, although some individuals differ with respect to some of the points. But it is hardly to be expected that all will agree on any given form, however symmetrical it may be, and at the same time well adapted for taking on flesh.

Considerable differences of opinion exist among sheep-farmers, as to whether a large or small ram is the best. This, however, can only be determined by local circumstances, and other considerations, which may strike the fancy of the breeder. Much will also depend upon the nature of the pasture-ground, as there can be no doubt that large rams require more food than small ones. Therefore, on lighter pastures a middling size should be preferred, to those which require a greater proportion of food.

The ram lives to the age of about fifteen years, and is fit for procreation at one year old. When castrated, they are termed wedders ; and they soon fatten, and the flesh becomes better flavoured, and finer in the fibre.

LEAPING.

In former times it was the practice to turn rams loose among the ewes; but they are now kept apart from them during the rutting season. A separate paddock, or small enclosure, is appropriated for the purpose, and to keep them quiet a couple of ewes are permitted to remain beside them. The ewes of the flock are brought to them, and they are only permitted to leap them once. The consequence of this improved method is, a ram is enabled to impregnate nearly double the number of ewes he would do, if allowed to go amongst them without any restraint, more especially a young ram. Formerly from sixty to eighty ewes were considered as many as a ram could serve; whereas, now, from one hundred to one hundred and twenty are impregnated by a single ram. Instances have occurred where one ram has served seven score in a season, but this is decidedly injudicious.

Much attention is required by the shepherd during the rutting season, to see that rams leap those ewes which are in season, as the ram will sometimes take a fancy for a particular sheep, which probably is not in sufficient heat to receive him, and will remain with her a whole day inactive, and will drive off such other ewes as come near him. When the shepherd notices a circumstance of this kind, he should remove the favourite ewe to a great distance from the ram; that is, of course, in cases where he is not kept apart from the flock.

To ascertain when the ewes have been served, it is a good practice to rub the breast of the ram with red keel, or other dry paint, which will leave a mark on those which he has leaped. But this is not a sure criterion, as tups frequently leap without accomplishing their end.

It is of great consequence that both rams and ewes should be in good condition before the rutting season, which of course must be regulated by climate, and the necessary quantity of spring food. It is likewise important that lambs should be dropped as early as possible, so that they may be well nursed, and able to provide for themselves before the winter commences.

THE EWE.

The ewe generally produces one lamb at a birth, sometimes two, and rarely three or four. She goes with young five months, and brings forth in spring. Some, however, produce their lambs at Christmas.

LAMBING.

When ewes are far gone in parturition, they should be moved about as seldom as possible, and fed upon dry ground, and in a quiet, retired situation, as much annoyance is apt to make them miscarry. When they happen to part with their lambs prematurely, they should be taken into the house if the weather be cold; but if the weather be mild and dry, they may be allowed to remain on the pasturage, if it is in a favourable locality. When ewes are about to yean, they should be located on as dry and smooth ground as possible, which will be of much benefit to them, as well as to their lambs.

When lambs are dropped on a place where they have difficulty in rising, they ought to be lifted, placed on their feet, and carried close to their dams. But when they can rise without aid, it is better to let them alone. It is usual to dock lambs when two or three days old; and the remaining portion should not exceed two or three inches in length. It is of much consequence for ewes to have short tails, as it not unfrequently happens that lambs at birth are entangled by the tails of the ewes, and in this way get strangled or killed. The tails of the males need not be docked until they

are about to be castrated. Short tails are of much consequence when they are attacked by the disorder called pinding.

While ewes are nursing, the pasture should be good, and they should be kept on the same feeding ground until their lambs are weaned.

It is of importance that the shepherd should be almost constantly with his flock during the lambing season, so as to assist such ewes as require it in cases of difficult parturition. In this office he should act with great gentleness, and watch the times when nature is acting her part to discharge the lamb.

When lambs are weakly, the shepherd should hold them up to the teats of their dam to suck. And in cases where the dam dies, he should endeavour to get another ewe to adopt the orphan lamb; and when he cannot succeed in this, should carry it home, as well as any weakly ones, so that they may receive his fostering care, or that of his family. This may be done by drawing off the milk from the udders of ewes that have an abundance of it, or from ewes which have lost their lambs. Lambs seldom attempt to eat grass for fourteen days, and during this time their whole sustenance consists of milk.

It not unfrequently happens that lambs die from hunger, in consequence of their dams refusing to suckle them. When this is the case, the poor lamb will be seen running about, and following any sheep it may come near, while it utters a mournful bleat. When it attempts to suck its dam, she will run off from it to a distance. When this is noticed the shepherd should examine the ewe, when he will find that sore nipples, or some other disease is the cause of her want of maternal care. If he discovers that sore nipples is the reason she deserts her young, they should be anointed with some emollient ointment to heal them: such as common cerate, or palm-oil. If the want of a sufficiency of milk is the cause, then the ewe should be supplied plentifully with green, rich food, and the lamb fed in the meantime with cows' milk, or from the milk of a ewe which has lost her lamb.

To make a ewe which has lost her lamb take to another, the following device has been adopted. The dead one is skinned, and the skin fixed on the other lamb, and both ewe and lamb confined together in a particular place, when the ewe will take to it, and then the false skin may be removed.

WEANING LAMBS.

It is rather a difficult task to wean lambs. They should be allowed to suck for three months and a half; after which time they should be removed to a distance from their dams, and kept apart for two or three weeks, when they may again be returned to the pasturage along with the ewes, and will give no further trouble. They should be so far off that their bleating cannot be heard by the ewes, otherwise they are sure to be extremely restless and anxious, and will hardly settle to feed.

Ewes will generally cease to have milk in about ten or twelve days, if they are not milked regularly, which some farmers are in the habit of doing for the purpose of making cheese. If, however, this is long continued, it cannot fail to weaken them, and reduce them to too low a condition before the rutting season. It will be proper to milk them every second day at first, when the lambs are removed from them, and allow a longer interval at each milking, until they cease to secrete milk, or at least in small quantities, which will be carried off by absorption.

CASTRATING LAMBS.

This operation may be performed at any time, from four-

teen days old, to that of a month or six weeks. In some districts it is deferred to a much later period. We would, however, recommend it to be done early, as there is much less danger of inflammation occurring at an early period than there is at a later one. Attention must be paid to the state of health of the animal at the time, as if weakly, or labouring under any other disease, constitutional irritation may ensue, and death is most likely to follow.

This operation is usually performed by the shepherd. It is executed by opening the scrotum or cod with a sharp scalpel, and drawing out the testicles with the spermatic cord attached to them. The arteries should be taken up, and secured by fine threads. Some shepherds perform the operation with their teeth, but this is a barbarous practice and should never be permitted, as it is more dangerous as well as more painful to the animal.

It is evident that this must be a painful and dangerous operation, when not judiciously performed ; and some lambs die on the day they are castrated. The second and third days, however, are those on which it may be judged of the probability of safely surviving it. This can be seen from the degree of inflammation; and it will be found that the greatest mortality is on the third and fourth days, in consequence of mortification, for which there is no remedy.

Strict attention should be paid to the state of the weather when castration is performed: the atmosphere should be dry, but not too warm, and, if possible, the lambs which have been gelded kept in a dry, quiet, and sheltered situation, until the inflammation has subsided. If wet weather comes on, it would be prudent to have them removed to a shed, or barn, but not too many crowded into one place, as they should have room to move about freely. The operation should not be performed when the nights are frosty.

INFLAMED UDDER, ETC.

When the ewe is suckling, she is liable to inflammation, as well as to hard tumours, in the udder. These are caused by obstructions in the lacteals, or milk-vessels; and unless they are speedily removed, mortification will ensue in two or three days. When tumours are discovered, the ewe should be taken into the house, the wool must be cut closely off, and the hard parts frequently rubbed with camphorated spirit of wine and goulard water, in the proportion of three parts of the former to one of the latter. Should the parts not get softened by the means recommended, and suppuration appear likely to follow, in that case the tumours should be opened with a lancet, and the matter squeezed out, and the wound carefully dressed with friar's balsam. It sometimes happens that the loss of one or both teats follow this complaint; when this is the case, then the best way is to fatten the ewe, and dispose of her, as she will never afterwards be adapted for breeding from.

* * *

CHAPTER VI.

MANAGEMENT, FEEDING, ETC., OF SHEEP.

SHELTER.

The natural habit of sheep is to range at liberty, and that, too, over a wide extent of country; therefore, confinement is ever to be avoided, except under peculiar circumstances. At the same time, all sheep-farmers must be aware of the positive necessity of their being sheltered sometimes;

and it will be universally acknowledged, that those which are protected from storms and much wet always thrive the best. Therefore, on all sheep farms sheds or other shelter should be provided for the animals in case of need.

DRIFTING SNOW.

In all mountainous countries sheep are liable to be overtaken by sudden falls of snow, and few situations afford natural shelter. Therefore large circular enclosures should be constructed of turf or stone, into which the sheep should be driven on the approach of snow. These should generally be on the south or west sides of the hill, as snow-storms usually proceed from the north or east. This should always be situated on dry ground, and advantage taken of any natural shelter, such as an elevated rock, or side of a ravine. The walls of turf enclosures should be four feet thick at the base, and two feet at top, and the height not less than six feet. There should be two or three openings in each, and these always on the south side. The spot on which they are situated should be on a slightly inclined plane; and drains should be properly constructed, so as to carry off the rain or melted snow; these should pass through holes in the walls, and be received in a large drain outside.

When sheep have been driven a few times into these enclosures, they will go into them of their own accord, on the approach of a storm, or even during indifferent weather. Consequently, such enclosures are of much advantage to a shepherd, as he will be certain that his sheep will be safe in them, when a snow-storm has taken place, without the danger to which he is liable, in attending to them personally.

Besides these enclosures, it has been found that strips and clumps of Scotch fir-trees are of much utility as shelter for sheep; and where such exist, sheep will always retire to the lee side of them on the approach of boisterous or rainy weather.

Where gentlemen feed sheep in their parks, there is generally sufficient shelter; but in the formation of new ones, we would especially recommend the introduction of a considerable proportion of spruce-firs, as better adapted for shelter both during snow and rain, owing to the thickness of their foliage. Dry knolls or rocky ground should always be preferred for planting clumps.

In localities where foxes are plentiful, it becomes necessary to have folds or cots constructed for the protection of lambs during the night, where they should be driven with their dams by the shepherd at nightfall. There are various methods of constructing these, which, however, comes more within the province of a work devoted to agriculture, than one on farriery. There is one, however, of a very simple and cheap construction, invented by Mr. Plowman, of Broome, Norfolk, which we may notice. This is twenty-one feet long, and three feet eleven inches high, composed of a top rail, with bars below passed through uprights. These have low cast-iron wheels below, on which they move strongly, but so lightly constructed that a boy may remove them from one place to another. It saves much time besides, for it can be changed from one locality to another in a few minutes; that is a fold which can contain at least three hundred sheep.

EFFECTS OF RAIN.

It is almost impossible to shelter large flocks during rainy weather, unless very large sheds were erected, which would cost too much money, besides occupying too great a space of ground. In the summer months, however, little

danger is to be apprehended from sheep being long exposed to rain. But in winter, weak sheep are very liable to be affected by their fleece getting drenched with rain, without an opportunity of drying themselves. When such, however, is the case, they must be taken into a barn or shed, to enable them to get dry, otherwise disease is sure to be induced.

HEAT AND FLIES.

In low and flat localities without shelter, sheep are frequently subjected to the oppressive heat of the sun, and likewise to the attacks of flies and various other tormenting insects, and even when they have shelter in flats, still they are not free from these pests. It is very common for these insects to deposit their eggs at the roots of the horns, or other parts about the head, as well as under the tail, which in the course of time will change into the grub or larva state. It is the duty of the shepherd to see that sheep are free from these, and to destroy their eggs when he finds them. This is most effectually done by the following ointment, which he must apply on the places where eggs are deposited :—

Mercurial ointment . .	1 ounce,
Resin, finely ground . .	1 ounce,
Hogs' lard . . .	3 ounces,

Let the lard be melted in an earthen or other pot, and the powdered resin added, and when properly incorporated, let the ointment be put in, and the whole stirred until cold, to prevent the mercury from falling to the bottom. A very small portion of the above, well rubbed on the parts, will have the desired effect.

As a preventive, the head and tail may be rubbed with the following composition :—

Tar	1 pint
Train-oil . . .	½ gallon.

The time when flies are most troublesome to sheep, is after shearing. Sheep that are fed on mountain-pasture are free from the attacks of insects.

WASHING.

Preparatory to shearing it is necessary to cleanse the fleece. The best method of performing this operation is to rail off a portion of the river or pond, with a sloping opening at one end, by which the sheep are driven into the water, at a part so deep that they will be unable to cross without swimming. A cask loaded should be fixed so that the men may stand in it dry, with a plank or bridge leading to it, to wash the sheep, before allowing each individual to pass to the opposite side, where they can walk out by means of an inclined plane. Before they reach the man who washes them they should be well soaked in the water, so as to save time. When washing is over, the flock should be driven to a dry, clean pasture. Of course, dusty roads must be carefully avoided, until the animals have become fairly dried. The lambs do not require more than simply swimming through the water.

SHEARING.

June is the time when shearing commences. It requires considerable care and nicety to perform this operation without mangling the fleece, and leaving large patches of wool adhering to the backs of the animals. After sheep are shorn, they are liable to the attacks of different insects, such as ticks and gad-flies, &c. The former of these should be carefully picked off, and the skin smeared all over with the following composition :—

Tar	½ gallon,
Train-oil . . .	4 gallons,
Spirit of turpentine .	1 pint ;

but oil of tar may be substituted for the turpentine, being considerably cheaper.

The method employed in sheep-shearing is so well known, that a detailed account of it is unnecessary.

FOOD.

It is considered prejudicial to change the food of sheep frequently, as it has a tendency to derange the regular action of the bowels, and to induce disease. Sudden change from one kind of pasture to another is certain to affect sheep, more particularly in the spring and autumn. In the summer and winter, when mountain-pasture is nearly dried up, the animals enjoy good health. It is, however, more dangerous to change suddenly from poor to rich diet, than the reverse.

Sheep thrive best where there is a tolerable uniformity of pasture all the year round. If the ground is wet, with the water standing on it here and there, that is quite unfit for pasturing sheep. Peat-ground is far less objectionable. Strong, rank grass is exceedingly liable to produce rot in sheep.

There is no better spring food for sheep than rye-grass and red clover; the former comes in most appropriately after turnip feeding. Cole, tares, and rye are likewise of much consequence as spring food.

For winter feeding, nothing is better than turnips, which should be accompanied by hay, or the straw of peas, beans, or wheat, chopped or cut. Swedish turnips are most approved of in most parts of England. Cabbages come in well late in the season, and sheep fatten quickly upon them. Some, however, consider potatoes better and more nutritive than turnips.

FATTENING.

Various methods have been adopted to force the feeding of sheep; among these may be particularly mentioned oil-cake, in addition to the ordinary food, half a cake being given daily. But hay, bran, chaff, and corn have all a tendency to fatten, and of the latter two or three pounds may be given daily, with advantage. The cake, corn, and chaff should be given in troughs, and the hay in racks, which may be placed over the troughs as a roof to keep the cake from being soaked with rain. Boiled potatoes are also a food which sheep are fond of, and well adapted for feeding them. From eighteen to twenty pounds of turnips are required daily for each sheep. Barleymeal has also been successfully used in feeding, as well as pease and beans and meal made from them. These last two are the most nutritious of all food; and it will be found advantageous to have a piece of rich land for the final stages of feeding.

On the subject of fattening there has been considerable diversity of opinion, but much depends upon the particular locality; for what may answer well in one place, may not prove effectual in another.

CHAPTER VII.

DIFFERENT BREEDS OF SHEEP.

The introduction of the Merino sheep has done much to improve the different breeds of British sheep. And in

almost every county, which formerly had their distinct and recognizable breeds, the Merino blood has, to a certain extent, been introduced. In our description of the ram, page 589, we have detailed the points which are now generally admitted to be the best in the form of sheep. So many crosses have taken place of late years, that there is hardly a breed which possesses characters by which they can be distinguished, if we except those which feed on the mountainous tracts of Wales and Scotland, which are for the most part small animals, and many of the flocks with black faces, and both males and females provided with horns. These sheep are remarkable for their fine, close grained, muscular fibre. Nearly allied to these are those of the Westmoreland, Yorkshire, and Northumberland mountain sheep, with white faces. Those which are now most propagated are long woolled, and also such as is of a fine texture. These were first successfully improved in the following counties, viz., Cumberland, Dorset, Hereford, Norfolk, and Sussex ; and these may be considered as the parent stocks of all our modern improved varieties. To attempt a specific description of these is now almost impossible, as the distinguishing characteristics of each are mere shades of difference.

SECTION IV.

DISEASES OF SWINE.

INTRODUCTION.

The most erroneous opinions prevailed for a long time respecting the nature of swine, as also their mode of treatment. It was fancied that this animal would thrive equally well, whether kept clean or dirty, as it was supposed its natural habits were to wallow in the dirt and mire. Modern experience, however, has proved these fancies to be most incorrect, and it is well known that pigs always prefer a clean sty and clean litter to those that are dirty; and it is an equally well-ascertained fact, and they never thrive when these important points are neglected.

If it is possible, swine-sties should be constructed in localities through which a running stream passes, and their sleeping-houses on a sloping bank, so that they may be dry and comfortable for the animals, and the inclined plane will carry off any urine from the enclosure appropriated to them. Those who keep a number of pigs should have separate sties for the young and the old, as well as for the accommodation of those which are in pig; and where they should be kept until they farrow.

Swine are liable to various diseases; but their treatment has not yet been sufficiently ascertained, in consequence of the difficulty of administering medical treatment to them. They are, besides, not robust in their constitutions, being exceedingly liable to complaints of the lungs, if kept in cold situations, from the effects of which they are frequently afflicted with a hard, dry, and husky cough. As with almost all our domestic animals, it is of infinite consequence that their food should be regularly given to them.

CHAPTER I.

INTERNAL COMPLAINTS.

INFLAMMATION OF THE LUNGS.

This complaint is often hereditary in pigs, and makes its appearance in animals predisposed to it, when subjected to wet and cold sties. It is also induced by their being too hastily changed from poor feeding to that which is rich.

Remedies.—In the highly inflammable state, with much cough, bleeding will be necessary; but when not severe, cooling aperients may be given. The following has been found effectual in affording relief:—

Cream of tartar .	1¼ ounce,
Saltpetre . . .	½ ounce,
Tartarized antimony .	1 drachm;

to be dissolved in warm water, and mixed with the food. The same quantity to be repeated every twelve hours, until an abatement of the complaint is apparent.

QUINSY.

This complaint manifests itself by a quickness of the breathing, and is often accompanied by a wheezing sound.

Remedies.—Clean, plentiful, and dry bedding is of the first importance; and give a spoonful of tartarized antimony in the food, every twelve hours. If swellings in the glands follow, and matter collects under the jaws, the gathering should be let out with a lancet, and the matter well squeezed out; after which dress it with tar-ointment.

BLOOD-STRIKING.

Pigs labouring under this complaint will frequently drop suddenly down, and die almost immediately. Sometimes, however, there are premonitory symptoms, indicating the approach of the complaint, by staggering, or the fore-legs giving way under the animal. This malady is caused by an overflow of blood to the head, and is analogous to the staggers in horses, cattle, sheep, &c. When pigs die of this complaint, putrefaction almost instantly ensues, which renders the carcase entirely useless.

Remedies.—Whenever the above symptoms are noticed, aperient medicines must be freely given; the following will act more rapidly than any other:—

Tartarized antimony .	1½ drachm,
Epsom salts . .	4 ounces;

to be given in gruel of oatmeal, or lintseed-meal, and repeated every twelve or fifteen hours, if necessary.

CHAPTER II.

EXTERNAL COMPLAINTS.

MANGE.

From high feeding and an inactive life, pigs are very liable to diseases of the skin, as also from want of cleanliness, which is first manifested by the animals rubbing themselves on any part of their sty, or other hard substances within their reach. The mange in pigs assumes a pustular form, and in the violence of rubbing, the top is often broken, which leaves a disagreeable looking scab on the skin.

This complaint is very infectious; consequently, as soon as it is noticed, the diseased animals should be immediately removed from among the others.

Remedies.—The first thing to be done, is to wash the animal thoroughly with a strong solution of soda, which must be allowed to dry, and then the following ointment should be applied:—

Sulphur . . .	1½ ounce,
Hellebore-root, powdered	½ ounce,
Muriatic acid . .	½ ounce,
Salt of tartar . .	¼ ounce,
Hogs' lard, or butter .	4 ounces.

Melt the hogs' lard, and add to it the salt of tartar, and let them be stirred well together, until perfectly incorporated, and the other ingredients may be put in; but the vessel should be removed from the fire previously. This ointment should be well rubbed over the whole animal with a piece of rag, or sponge. One application of this will suffice, if well rubbed in ; but if the red appearance of the skin has not abated in two days, it will be necessary to repeat the rubbing. At the time of the first application, give the following internally, once a day, for a week. It is the easiest plan to put it in the meat :—

Tartarized antimony .	1 drachm,
Sulphur . . .	$\frac{1}{4}$ ounce,
Nitre . . .	$\frac{1}{2}$ ounce,

During the two first days the animal must be kept very warm and dry, and at the end of that time, the ointment should be well washed off with a solution of soda, made pretty strong, in the proportion of half-a-pound to two quarts of water.

GARGUT, OR DISTENDED UDDER.

This complaint is occasioned by the lacteal vessels becoming obstructed, and the udders being distended by coagulated milk, and internal inflammation of the parts are induced. In some instances, this disease is caused by too nutritious food previous to the time of farrowing ; and when it occurs afterwards, it is attributed to the teats not being sucked or drawn down sufficiently soon after having farrowed.

The first remedy is to milk the animal with the hand, as young pigs will not suck their dams, when the milk is corrupted, nor would it be proper to allow them to do so, if they were so inclined. And when this has been accomplished, the following ointment must be gently applied, and slight friction used :—

Camphorated spirit of wine	1 ounce,
Florence oil .	$\frac{1}{2}$ ounce,
Goulard's extract .	$\frac{1}{2}$ ounce.

Two grains of calomel, for two or three nights, may also be given with advantage.

CRACKED EARS.

In hot seasons pigs are liable to excoriation and cracking behind the ears: the ointment recommended for mange may be applied, and afterwards, the composition for sore udder.

CHAPTER III.

BREEDING, GESTATION, AND PARTURITION.

BREEDING, ETC.

Like all our other domestic animals, the hog has, of late years, been much improved, and nearly a uniform shaped animal is now generally diffused throughout Great Britain and Ireland. In the latter country, twenty-five years ago, the prevailing character was more that of a greyhound than of a hog: long-bodied and legged, high-backed, and leanness, being their ordinary characteristics.

The body should be of moderate length; the head broad and rather flat; the carcase well rounded and compact; the legs of moderate length, and rather short than otherwise, and fine in the bone; the shoulders broad, breast wide, and the quarters full; the hide must be fine and thin, and the ears rather small; the feet should be rather small, with the claws upright and even. The form which we have particularized holds good, whether the animals be of a large or small size.

The sow goes four months with young, and brings forth from six to twelve, and even so many as twenty at a litter, and that twice a year. At the time of farrowing, the sow must be carefully watched, as it is not uncommon for her to devour her young.

It has always been found that the best pigs are produced from a full-grown boar; but when they become aged, the progeny seldom prove good. The sow should be wide in the chest, and capacious in the belly; and if well nursed before weaning, she may procreate at the age of seven or eight months, and produce an excellent litter of young. But, we think ten or twelve months is soon enough to commence breeding, as the animal will by that time have gained sufficient strength to bear the exertion of gestation and parturition. And no boar should be put to a sow until he is at least a twelvemonth old.

It is of great importance that sows should farrow in warm weather, as when they produce in the winter season, the pigs are very liable to die with cold. When they are farrowed late in August, the chances are much against many of them getting through the winter; and those which do are seldom strong and healthy. It is, therefore, advisable to part with these as soon as practicable.

During pregnancy sows should be kept separate from others which are not in that condition, as by keeping many together, the pigs are liable to be injured in the womb, and even killed, which may have a very prejudicial influence on the rest of the progeny, as well as on the sow.

It is of great importance to keep the sow and her young in a dry and warm situation, with plenty of good litter; and neither should be permitted to go abroad in bad weather. When sows have the unnatural propensity of devouring their young, they should be carefully watched for some days after their birth ; and such as have this desire, should be parted with, as useless for breeding from.

During the time of pregnancy, sows should be well fed, and have a meal of a rich mash twice a day, at least, and, besides, a good supply of vegetable substances, such as cabbages, carrots, or potatoes ; and when they are nursing their young, they should have a still larger supply of food, to keep up that secretion of milk so essentially necessary for the supply of such a numerous progeny.

Pigs may be weaned when about eight weeks old, and separated from the sow. She should be shut up by herself for a week or so, and well fed, to restore what she has lost in suckling her young. She will very soon after this manifest a desire to take the boar.

The times at which hogs are fattened, are twice a year, namely, beginning in October, for the winter, and February or March for the spring time. Where skimmed-milk can be spared, it will be found the best liquid, and mixed with ground oats, barley-meal, pea-meal, or bean-meal, as also pollard ; these may be given combined, with great advantage. Indeed it is better to neutralize the heating effects of pea and bean-meal, by a mixture of some of the other farinaceous bodies. Malted barley has also been given to pigs while fattening, with considerable success. Potatoes and carrots boiled, mixed with skimmed or butter-milk, and even whey, prove an excellent variety for inducing an increase of substance in the animals. The refuse of the brewhouse and distillery are also found to be beneficial in fattening swine, with other farinaceous substances mixed in them

From the contumacious and unruly nature of hogs, there is great difficulty, if not an utter impossibility of performing operations on them, as with other animals, and consequently little progress has been made in the application of the veterinary art to these animals. Bleeding, which is so essential in all inflammatory complaints, cannot be applied to hogs. The ordinary methods, of cutting off part of the ears and tail, can do but little good; and equally ineffective is the plan of opening a vein in the roof of the mouth, about an inch from the front, in a line between the second and third tooth, an operation that it is almost impossible to perform on a pig, and the bleeding is never of sufficient extent to relieve inflammation. Purgatives will consequently be the best remedies to be adopted. Epsom salts, varying in quantity, from one to two ounces, according to the age of the animal, and suphur, in doses of from one to three drachms, may be administered. Attention should, therefore, be given chiefly to preventive, rather than remedial means. It is of great consequence to let the animals have occasionally a quantity of green meat, as they will always be found to eat it with avidity. Grass, tares, or clover will be used with advantage; and boiled hay is of great use in keeping their bowels in a healthy state, and should be given twice a day, in a lukewarm state, every week. The hay should be boiled in a net, and the tea which is taken from it, should be thickened with oatmeal. The hay may be again dried, and store-cattle will frequently eat it afterwards; but when they refuse it, litter may be made of it.

SECTION V.

DISEASES OF DOGS.

INTRODUCTION.

The dog seems to have been destined by the Creator to be the friend and assistant of man. Throughout the dangers and difficulties which beset the human being, particularly in an inartificial condition of society, the dog has ever proved himself the vigorous and faithful defender of his life and property, as well as a powerful and essential auxiliary in subduing other animals to his purpose, and of securing them as his food. Without the assistance of the dog, man would not even yet have obtained a beneficial dominion over the various races of wild animals of the earth, or been able to watch with sufficient care those creatures destined for his support.

Of all animals known to mankind, the dog is the most diversified in form, size, proportions, properties, and intellect, agreeing only in one striking and admirable peculiarity —his constant attachment and fidelity to his master. Our domestic dog, with all the varied and striking varieties of form, is, however, but one species; changed and modified by local circumstances, domestication, and breeding; consequently, it is improper to consider and call pointers, terriers, mastiffs, and greyhounds *species*, as they are mere *varieties*. The parent stock from which all our domesticated races have sprung, has long been a dispute among naturalists, and is at this time an unsettled point. Buffon was of opinion that the shepherds' dog was the progenitor of them all.

Dogs in a domesticated condition are liable to a variety of diseases; but, above all others, what has been termed canine madness, or hydrophobia, is the worst, and most to be dreaded by mankind. They are, besides, subject to many complaints, in some respects similar to those of the human body. We believe there is none more common with them than pulmonary consumption and worm complaints, diseases to which mankind in this country are very liable. Our friend, Mr. Mackenzie, keeper of the anatomical museum in the University of Edinburgh, an expert anatomist and physiologist, concurs with me in this opinion, and informs me that he has made many dissections of dogs, and found diseased lungs very prevalent in them. This is chiefly to be attributed to sleeping in damp situations, and in the open air, at times, when they are for the most part accustomed to be kept comfortable and dry in a house. Some families of dogs are constitutionally liable to this disorder; and sportsmen would do well to avoid breeding from a stock predisposed to consumption.

CHAPTER I.

DISEASES OF THE HEAD AND CHEST.

BRONCHITIS, OR SWELLING IN THE THROAT.

SYMPTOMS.—This is a common complaint, and consists of an enlargement of the glands of the throat. It is a disease to which the smaller breeds of dogs are more particularly subject, and comparatively of rare occurrence with the larger kinds. Young dogs are most liable to it; and if not attended to early, it may become a fixed swelling, not reducible at any after period. It produces a stiffness of the neck; and if swelling is on one side, the animal sometimes has his head inclining to the opposite side. There is seldom much pain, nor does it often terminate fatally. It, however, occasions pain if pressed upon.

REMEDIES.—The hair should be clipped off the swelling, and the part well rubbed with the following ointment :—

Calomel . . .	1 drachm,
White cerate . .	½ ounce.

This to be repeated daily, until a cure is effected; but if no diminution is visible in a week, add half-an-ounce of blistering-ointment to the above proportions. Let the animal have a quarter of an ounce of nitre, in his drink, daily.

If the swelling is noticed early, fomentations will often perform a cure Sew up a quantity of camomile flowers in a bag, immerse them in hot water, and apply it to the parts affected. Let it be applied as hot as the animal can bear it.

The application should be taken off several times during the day, and heated again.

INTERNAL ULCERATION OF THE EAR.

Symptoms.—This disease is manifested by the dog continually shaking his head; and a discharge of matter will take place after the complaint is matured; but before the matter is seen, a dry, scurfy, red scab is formed on the inside of the ear. It is occasioned by too high feeding, and by the animal taking the water when heated. It often proves fatal.

Remedies.—When the case is not severe, all that will be necessary is to use the following wash, slightly warmed:—

Sugar of lead . .	1 drachm,
Rose, or rain-water .	4 ounces;

about a teaspoonful should be poured in night and morning.

When the disease is of a more severe kind, the following remedy must be applied:—

White vitriol . .	18 grains,
Decoction of oak-bark .	4 ounces.

When the above fails to prove effectual, recourse must be had to mercury. Let the ears be well washed with a solution of soda, and then rubbed with the following:—

Strong mercurial ointment	1 ounce,
Hogs' lard . . .	½ ounce.

Besides rubbing internally, the ointment should be well applied at the base of the ear externally, close to the head.

COUGHS.

It frequently happens that cough precedes the distemper; and if the dog is young, and no probable reason can be assigned for the cold he has taken, it may reasonably be inferred that it is a premonitory symptom of that disease;

and precautionary measures ought to be adopted. The cough which precedes distemper is always accompanied by dulness, and cold shiverings, with wasting of the flesh ; and it is always dry and short in its character. Still there is little perceptible diminution in his appetite. For this, the following may be given with great advantage :—

Febrifuge antimonial powder	6 grains,
Powdered nitre . .	8 grains,
Lintseed-tea . .	1 gill.

A cough arising from a cold is distinguished from that connected with the distemper by its shortness and frequency. If it is very severe, bleeding will be necessary, after which give from one to three grains of emetic tartar, according to the size of the dog.

Sometimes cough is occasioned by worms ; when this is the case, the coat stares, and the breath is very fetid. When this is suspected, it must be treated as recommended for worms, under its proper head.

INFLAMMATION OF THE LUNGS.

This is occasioned by colds, and many dogs die of it. It is a complaint which, with the canine species, is very rapid in its effects; and, therefore, must be speedily attended to.

Symptoms.—An animal labouring under this malady holds up his head, as if to give him more freedom in breathing ; the pulse is much accelerated, with an oppressed beating of the heart.

Remedies.—The first remedy is bleeding, and that rather copiously ; and a blistering mixture well rubbed in about the region of the lungs and chest generally. Then give the following mixture :—

Powdered foxglove .	12 grains,
Emetic tartar . .	3 grains,
Nitre, powdered . .	1 drachm.

If for a large dog, let it be made into six powders; for one of a middling size, nine; and for a small one, twelve. One to be given every three hours, until the symptoms are abated, and then they may be given every six hours, for a day afterwards. The animal must be kept very warm. If the powders produce vomiting, they must be divided into two parts each, and given less frequently.

ASTHMA.

Confinement and high feeding are the causes of asthma; a complaint to which dogs are very liable, and are attacked with it at any period of life, but more especially at three or four years, where they are over-fed; but with those who are less pampered, it is seldom known until they are six or seven. It may be brought on at an earlier period by severe colds, and inflammatory complaints in the lungs. When it proceeds from over-feeding, it is caused by an accumulation of fat in the regions of the heart and lungs. It manifests itself by a short, harsh, and dry cough, and difficulty in breathing, more particularly when the animal has been much exercised, or by catching cold. This malady generally comes on gradually. Remedies should be adopted as soon as any indications of the complaint are noticed; otherwise, if allowed to attain a height, it is likely to prove fatal.

Remedies.—If there appear to be inflammation at an early stage of the complaint, bleeding will be necessary, which should be followed by gentle alteratives. The following purgative must be administered:—

Calomel	½ grain,
Nitre	4 grains,
Cream of tartar	10 grains,
James's powder	2 grains,

to be made into a ball with lintseed-meal and treacle, and put down the animal's throat. To be repeated every morning, and, if the complaint is severe, each evening likewise. The above is for an ordinary-sized dog, and is rather too much for a small one; but for a large animal it must be increased.

If the calomel sickens the dog, the following preparation may be given instead of the above:—

Emetic tartar	½ grain,
Nitre	3 grains,
Powdered foxglove	½ grain;

prepared as a ball, with the lintseed-meal and treacle.

THE DISTEMPER.

This universal and fatal disorder made its first appearance amongst the dogs of Great Britain upwards of eighty years ago, at which period its ravages were widely diffused over the country. At that time about seven out of every ten fell victims to its malignity. The virulence of this disease and its baneful effects have now, however, greatly abated, either from the preventive remedies which are had recourse to at its commencement, or from the operation of certain medicines applied in the actual progress of the disease. I, however, find that this malady has been known for a much longer time on the Continent than in this country. It is as infectious among dogs as the small-pox, measles, and scarlet-fever among the human species; and the contagious miasmata, like those arising from the diseases just mentioned, retain their destructive properties a long time after separation from the distempered animal. Young hounds, for example, brought in a state of health into a kennel where others have gone through the distemper, seldom escape it. Kennels have been carefully washed with water, then whitewashed, and even repeatedly fumigated with muriatic acid, without any good results. The dogs generally sicken the second week after exposure to the contagion. It commences with inflammation of the substance of the lungs, and generally of the mucous membrane of the bronchia. The inflammation at the same time seizes on the membranes of the nostrils, and those lining the bones of the nose, particularly the nasal portion of the ethmoid bone. These membranes are often inflamed to such a degree as to occasion extravasation of blood.

Dr. Jenner mentions a case which came under his observation, of a dog dying within twenty-four hours after infection, and in that short space of time the greater portion of the lungs was, from exudation, converted into a substance nearly as solid as the liver of a sound animal. When inflammation of the lungs is very severe, the dog frequently dies on the third day.

By judicious treatment, the distemper might be, in all probability, entirely banished, or at least its features be very much mitigated.

Colonel Hawker, in his "Instructions to Young Sportsmen," mentions a case of a dog belonging to himself, on which he performed inoculation, by *vaccine virus*, or the matter of cow-pox, had the effect of preventing the distemper completely; and this was found an effectual preventive by James Drearden, Esq., of Rochdale, Lancashire, confirmed by an extensive and successful practice. It would certainly be worth while to try this expedient, as being exceedingly simple; and we have ascertained that in the instances where dogs have had the distemper after vaccination, it has been very mild.

The manner in which this operation is performed on a dog, is to make a puncture or scratch inside of the fore-leg, within the shoulder pit : the abrasion is then rubbed with a small quill with the *virus*. A better method, however, is to puncture with a lancet, charged with the *virus*, the inside of the ear. The *virus* acts with more certainty on the sensible skin devoid of hair, and the animal cannot remove it by licking with the tongue.

Although the distemper is a disease which, for the most part, attacks puppies from four to twelve months old, yet it is said there are instances where old dogs have been affected by it, which had not the disease when young. Without entering into a more lengthened detail of this disorder, I shall only notice the prevailing symptoms, and mode of treatment.

SYMPTOMS.—There are some symptoms in the distemper which predominate, although the general ones are not invariably the same. In the first stages of the disease, the dog has a hard, dry cough, a want of nervous energy, depression of spirits, a swelling of the glands of the throat, and almost total loss of appetite ; after which he is seized with a running at the nose and eyes, when emaciation and great weakness ensue, more especially in the hinder extremities. These symptoms are universally followed by convulsive twitchings of the head, and sometimes in other parts of the body, indicating considerable irritation in the brain and spinal marrow. The bowels are violently affected, either by being costive or extremely loose ; and in either case the dog suffers great pain. When these acute symptoms continue, they are soon followed by vertigo, or giddiness, which produces dimness of the sight ; in which case the dog runs round, foams at the mouth, and makes a piteous moaning or howling. In truth, inflammation and effusion take place in the brain, producing water in the head, a disease to which young children are liable, from long-continued irritation in the stomach and bowels.

These affections are accompanied by great irritability of the stomach, which discharges everything as soon as taken; and it not unfrequently happens that the poor animal expires in one of these spasmodic affections. When the distemper reaches this degree of virulence, few dogs recover; but there have been instances where Blaine's medicine has proved effectual, even in the worst stages of the disease. Dr. James's powders have also, in extreme cases, produced a favourable change. Even in the worst cases the dog always retains its sanity, and will drink water, though certainly not very freely—two circumstances which will readily distinguish the disease in question from canine madness.

Remedies.—If this disease is attended to at its first appearance, the after-symptoms may be greatly mitigated, by administering opening medicines, in small quantities, and persisting in their use; and afterwards in larger doses, as the disease makes progress. This will be found of the greatest consequence in all complaints where the mucous membrane is likely to be affected, which is almost invariably the case where there is inflammation of the lungs; and was satisfactorily proved, by my late talented friend Dr. Macintosh, lecturer on the practice of physic, Edinburgh, to be a general accompaniment of all pulmonary diseases in the human species. For this purpose I would recommend, so soon as the symptoms appear, to administer an ounce of castor-oil, and, after its operation has abated, the following bolus should be given:—

Crocus metallorum, finely levigated .	6 grains,
White antimonial powder . .	6 grains,
Diaphoretic calx of antimony . .	10 grains;

to be mixed up with treacle and lintseed meal into a ball.

and given every two hours; the dog should be kept very warm during its operation, and should be supplied frequently with new milk or water-gruel. If this medicine occasions sickness, or brings on great laxity in the bowels, the doses must be temporarily stopped, or greatly diminished.

The above dose is sufficient for a pointer, fox-hound, harrier, or other large dog of ten months old. If younger, or a smaller dog, the quantities must be proportionally diminished.

Mr. Shaw, principal gamekeeper to his grace the Duke of Buccleugh, at Dalkeith, has generally found the distemper easily disposed of by attending to the first symptoms of the disease, and immediately administering a dose of calomel and jalap every second day, and paying strict attention to the food of the patient. He seldom found it necessary to give more than three doses. He has, however, remarked, that when the disease begins with a flux, it generally proves fatal. This discharge is brought on by cold, and by sleeping in damp quarters. He mentions having lost several brace of greyhounds from one night's bad lodging.

Mr. Daniel is of opinion that Blaine's medicine is an effectual remedy: it is made up in packets, marked with different numbers, 1, 2, and 3. For a Newfoundland dog, mastiff, pointer, and setter, No. 1 should be used; for fox-hounds, harriers, and other dogs of a middling size, use No. 2; and for cockers, and all other varieties, No. 3 will prove a sufficient dose. He found that soon after administering Blaine's powders, even although the disease had got to a height, the violence of the symptoms abated, the spasms became less frequent, and generally within twenty-four hours they completely subsided, leaving only a slight discharge from the nose. Our own experience completely coincides with that of Mr. Daniel, although in some instances it will last for weeks; in the event of which I would recommend strict attention to the state of the bowels, and that the nose be frequently fomented with pieces of flannel dipped in hot milk and water.

Colonel Hawker recommends, in the case of a discharge from the nose, the use of a lotion, made by mixing half an ounce of sugar of lead, and the same quantity of alum, with a pint of water, and that the nose should be syringed with it. However effectual such applications may be in stopping the discharge, yet I cannot too strongly condemn the use of them, as having a tendency to bring on other diseases in the mucous membrane of the nose, and thereby affect, if not totally destroy, the olfactory nerves. But the truth is, the dischage from the nose is by no means an unfavourable symptom: the main risk the dog runs in this disease is from *internal* inflammation, and not from any affection of the organ; and it is a very generally received opinion in medical practice, that it is not safe to check discharges suddenly.

When the irritability of the stomach continues, and it refuses to retain the medicine, the latter should be mixed up with a small piece of butter, and from thirty to fifty drops of laudanum added, according to the age, size, and strength of the dog. Should this not remain in the stomach, an hour and a half afterwards the same quantity of laudanum should be given in a little broth. The powder must also be administered, in twenty minutes or half an hour, made into a kind of paste with treacle and flour, or lintseed-meal, which will certainly have the effect of allaying the vomiting. But if the bowels are obstructed, which generally follows the use of much laudanum, and the reaching still continues, in this case some active purgative should be had recourse to, such as twenty grains of jalap, or fifteen grains of calomel, accompanied with from five to eight drops of laudanum, to allay the irritation; either of these should be made up into a ball, and put down the dog's throat; or two tablespoonfuls of castor-oil may be given in their stead. Should these prescriptions fail, a clyster should next be tried, composed of oatmeal-gruel, salt, and oil; and when the bowels are moved by this, the medicine may then be given, accompanied with a few drops of laudanum.

Where there is great alvine flux attending this disease, from thirty or forty drops of laudanum must be administered, mixed with an ounce of sweet or almond-oil. It will be of no use to give the powder until the irritation has somewhat abated, as its effects will be nearly lost in passing too rapidly through the intestines.

The following remedies have been found effectual:—

One ounce of Peruvian bark, in a glass of port wine, to be given twice a day. Norris's drops, to the extent of a tablespoonful, in the same quantity of port wine, given three times a day; the quantity to be diminished as the dog grows better.

Colonel Hawker recommends the following:—

Opium	3 grains,
Emetic tartar . .	5 grains.

to be administered at night; and the same dose to be repeated every third night, until the dog recovers, taking care to keep him warm, and always to feed him with warm liquid diet, such as broth, gruel, &c.

Dr. Taylor, of East Yarmouth, gave

Gamboge . . .	20 grains,
White hellebore powder	30 grains,

made into six balls, one to a full-grown dog, six successive mornings, or half the quantity to a puppy, or a small dog, such as a cocker, terrier, &c.

For a half-grown pointer, or other young dog :—

Jalap, in powder .	20 grains,
Calomel . . .	4 grains,

made into a ball with treacle.

For a full-grown pointer, or other large dog :—

Jalap, in powder .	25 grains,
Calomel . . .	7 grains,

mixed as above ; and one of the doses given every second morning, mixed with a little butter; and if the dog will not take it in this form, it must be made into a small ball, and forced down his throat. The food should always be light, and easy of digestion.

I was favoured with the following receipt from a friend, who has had a great deal of experience in the rearing of dogs, for upwards of twenty-five years. He says it has always proved a most effectual remedy, in all cases in which he has applied it :—

Calomel . . .	1 drachm,
Tartar emetic . .	20 grains,
Jalap . . .	1 drachm,
Gamboge . . .	1 drachm ;

to be made into six balls, with conserve of roses, and one to be given every morning, for a week.

Care should be taken to support the strength of the animal by light, nourishing diet, after the inflammatory stage is over, and the discharge from the nostrils fully established. Various authors recommend the too general use of emetics in the distemper, which, I conceive, must frequently be attended with evil consequences, as they are, for the most part, inadmissible in inflammatory diseases.

As the distemper is infectious, those dogs labouring under

this malady should be kept apart from others; and exposure to the air, when not under the effects of medicine, will be found beneficial. This disorder has an affinity to some human diseases, and rarely attacks a dog a second time. Fortunately for humanity, the distemper is not communicable to man. Neither the effluvia from the diseased dog, nor the bite, has proved in any instance infectious.

HYDROPHOBIA.

The last and certainly the most dreadful of all diseases incidental to the canine species is madness, and its fatal effects, unfortunately, are frequently extended to man and other animals; and, what is to be deeply lamented in this fearful disorder is, that hitherto no specific has been discovered for its cure. Many have been the attempted remedies applied by men of the first skill in medical science, but without effect; and a vast variety of pretended nostrums have been advertised from time to time. Under these circumstances, I shall content myself with noticing the symptoms of this malady, and recommend rather that we avoid the evil, than expect a cure.

No satisfactory cause for hydrophobia has yet been given, although it has been supposed to be occasioned by extreme heat, and want of water. Were these the agents of this malady, it would be more prevalent in tropical climates than in Europe, which is by no means the case. Experience, however, has taught us that it makes its appearance in the canine species usually in hot, sultry weather; therefore, although it is not the cause, it is a concomitant of the disorder.

In Europe, hydrophobia generally makes its appearance in the extreme heat of summer, or the first months of autumn. Where packs of hounds are kept, the feeders should watch narrowly at this season; and if dogs refuse to feed and drink, become melancholy, give up barking, murmur, and are peevish, and have their ears and tail dropping more than usual, and retire into some remote corner, there are strong reasons to suspect the approach of madness. Those seen in this state should immediately be removed from the kennel, and tied up in some secure place. The next appearance which dogs exhibit in this complaint is drowsiness, with watery and heavy eyes, lolling out of the tongue, and frothing at the mouth. These symptoms are followed by the animals becoming restless; and if not confined, they will take to running and panting, appear dejected, and will attempt to bite any living creature they meet. In this melancholy state a dog will roam about for two or three days, when, from exhaustion, occasioned by the want of food, he falls a victim to this disease.

Precaution.—When a person is bitten by a mad dog, the wound should be immediately burnt with lunar caustic; but the most effectual way to prevent the poison from getting into the system, is to cut out the piece of muscle which has been bitten.

BITES OF VIPERS.

If the part is rubbed immediately with sweet-oil, the effect of the poison is destroyed; and the following composition may be afterwards used :—

Green elder ointment .	1 ounce,
Savoin tree . . .	1 ounce.

It not unfrequently happens that considerable swelling of the head takes place after the bite of a viper; when this occurs, recourse should be had to bleeding, and purgative medicines. The following must be given, once a day, until the swelling subsides :—

Jalap	5 grains,
Powdered aloes . .	2 grains,
Calomel . .	$\frac{1}{2}$ grain.

POISON.

When it has been discovered that a dog has taken poison, give the following specific as soon as possible :—

Emetic tartar, dissolved in water 15 grains,

which will have the effect of producing vomiting ; and after the reaching has subsided, give him two ounces of castor-oil, or ten grains of turpeth mineral, if a large dog, mixed up in butter, and rubbed on his nose. If the dog is middle sized, eight grains ; and if very small, five grains will have the effect.

Turpeth mineral is useful as an emetic for a dog, upon any occasion ; eight grains of it may be mixed with a little butter, and rubbed on his nose, he will lick it off, and it will operate in about five minutes.

Warreners very often make use of *nux vomica,* as a poison, which is not unfrequently concealed in a piece of meat, to entice foumarts and weasels to eat it. Hounds and other sporting dogs pick it up, and if no remedy is administered, convulsive fits, and death itself, will shortly ensue. When dogs are suspected of having taken such poison, the following effectual remedy should be instantly applied :—Put as much common salt into the dog's mouth as can be got down, hold the head upwards, and force open the mouth, and by fixing a stick across, prevents the mouth from shutting, whilst the throat is filled with salt ; a sufficient quantity, both to prove an emetic and a laxative, will soon dissolve with the saliva, and be swallowed. Warm broth should frequently be given, to prevent faintness, which might, without nourishment, prove fatal. Two tablespoonfuls of castor-oil would accelerate its action downwards. When the effects of the salt, &c., have ceased, give the dog fifteen drops of laudanum.

BLINDNESS.

During the time that dogs are afflicted with the distemper, they are sometimes subject to diseases of the eyes ; the most frequent of which is an abscess in the transparent cornea, which, on its first appearance, is of a blue tinge ; in some instances there is a darkness of the part affected, in the middle of which a speck is visible, which gradually assumes the form of an abscess. This suppurates, leaving an ulcer, which not unfrequently extends over the entire pupil, often entirely preventing the animal from distinguishing objects, and having such an appearance, that no hope of recovery can be entertained. But, however intense the affection may be, whenever the distemper ceases, the ulcer dries up, and the animal gradually acquires its wonted vision. Let the eye be washed with the following, twice or thrice a day :—

White vitriol . .	8 grains,
Burnt alum, powdered .	10 grains,
Litharge . . .	1 drachm,
Distilled water . .	3 ounces,

The same wash may be used for other complaints of the eye.

CHAPTER II.

DISEASES OF THE ABDOMEN, ETC.

INFLAMMATION OF THE BOWELS.

Symptoms.—This complaint is indicated by extreme restlessness in the dog, getting up and lying down, frequently changing places, and groaning. Sometimes he will lose the use of his hinder extremities ; and if his back, over the loins, be touched, he will exhibit indications of suffering; if he is moved from one place to another, he will utter loud screams. Costiveness frequently accompanies this disease.

Remedies.—Bathing the animal in a tub of warm water frequently has a salutary effect. He should be kept in the water for a considerable time, and well rubbed while he is in it. When taken out let him be wiped quite dry, and rolled up in a warm blanket, and kept near a fire, if the weather be cold. Spring is the time dogs are most liable to attacks of this kind.

If the animal does not exhibit signs of being better from this treatment, it will be necessary to have recourse to bleeding ; and then let him have the following mixture, which is for a dog of middle size :—

Laudanum . .	20 drops,
Sulphuric æther . .	25 drops,
Castor-oil . . .	1 ounce.

This may be facilitated in its operation by the use of a clyster of gruel, butter, and salt. If the above fails to purge the animal in six or seven hours, then the following must be given :—

Calomel . . .	4 grains,
Aloes . . .	1 drachm,
Laudanum, or powdered opium	1 grain ;

to be made into a ball with treacle, and lintseed-meal, or simply with butter. The above quantity to be increased or diminished, according to the size of the dog. Should it not operate in three or four hours, a like quantity may be given ; and when the bowels have been moved, they must be kept open for three or four days.

Should the hinder parts still continue semi-paralysed, the following stimulant should be used for rubbing them, which may be done three or four times daily :—

Spirit of turpentine .	2 ounces.
Hartshorn . . .	2 ounces,
Laudanum . . .	2 drachms,
Sweet-oil . . .	1½ ounce.

It is not likely that the animal will suddenly recover the use of the limbs ; it will, therefore, be necessary to persevere in the use of the warm bath, every day or two. The animal must in the meantime be sparingly fed, with thin oatmeal-porridge and milk, or other farinaceous food.

If costiveness be the cause of inflammation, and the dog exhibit a dull appearance, with a dislike to move from one place to another, his belly be hot, and give pain to him when touched, it will be necessary to use very active means to clear out the bowels, as the inflammation will rather increase than subside, while in this condition. The first thing to be tried is an ounce and a half of castor-oil ; but if this does not operate, then the following must be given :—

Calomel . . .	5 grains,
Aloes	1½ drachm.

At the same time give clysters until the medicine operates.

Sometimes costiveness is mistaken for the animals bowel's being in a lax state. This is when the animal passes its fæces in small balls, accompanied by a quantity of mucous matter; but this is a sure sign of the bowels being really bound up.

When inflammation has its origin in cold, accompanied by panting, heat, and thirst, and the dog is very restless, and the stomach will not retain the food, accompanied by heat in the belly, redness of the eyeballs, and there is an alternation of hotness and coldness of the nose, and the dog groans, it may be inferred that the inflammation is considerable; bleeding must, therefore, be had recourse to immediately, and clysters of castor-oil, with from fifteen to twenty drops of laudanum in them, according to the size of the dog. If the bowels become costive, they must be kept open with the following purgative, until the dog recovers.

Jalap . . .	5 grains,
Aloes, powdered . .	1 grain.

If bile is the cause of inflammation, which will be known by the animal vomiting a dark yellow, or blackish matter, and without the bowels being much affected in either way, the following aperient must be given :—

Calomel . . .	3 grains,
Compound extract of colocynth	3 grains,

made up in the form of a pill, and put down the animal's throat. One may be given every fifteen hours, until cured.

If the evacuations are accompanied with blood, and the bowels in a naturally loose condition, laxatives must not be had recourse to, but the following used :—

Powdered colombo .	1 drachm,
Prepared chalk . .	1 drachm,
Opium, powdered .	1 grain,
Gum-arabic, powdered .	1 drachm.

The above to be made into from three to six balls, according to the size of the dog, and given every six hours, until the bloody symptoms disappear.

INFLAMMATION OF THE BLADDER.

Symptoms.—Panting, and extreme restlessness, heat in the belly, with swelling and tenderness, are the indications of this complaint, accompanied by the urine being voided frequently, and in small quantities, and in some cases a total suppression of it; at other times, it is evacuated by drops, and mixed with blood.

Remedies.—Bleeding must first be adopted, and then opening medicines given, as follows :—

Calomel . . .	2 grains,
Extract of colocynth .	2 grains.

In his drink should be given, twice or thrice a day,

Nitre	1 drachm,
Powdered gum-arabic .	2 drachms.

If the animal exhibits pain when he voids his urine, then it will be necessary to give half-a-grain of powdered opium, put in a little meal and butter, and forced down his throat. Fomentations applied over the region of the bladder will have a good effect in alleviating pain.

WORMS.

Dogs, like all other animals, are subject to worm-disorders, more particularly at an early age. There are five distinct species which inhabit their intestines, the *oxguris*, *ascaris*, and three species of tape-worm, viz., the *tœnia caliniformis, serrata,* and the *cucurbitina.*

Without entering into the question of the formation of worms in the intestines of animals, I shall simply describe those known to inhabit dogs, with the medical treatment for each.

It may be noticed, in passing, however, that there are several causes which contribute to the *production* of worms. Among them are, damp and ill-aired sleeping-places, and food which is too nutritive, having thereby the effect of rendering the chyle too rich. Hence, worms are more common with dogs which are petted and over-fed, than those which are nourished upon a more simple diet. When the digestive organs are weakened, it contributes greatly to the generation of worms. Another and very powerful cause arises from the food of dogs being frequently made without salt, a condiment which is essentially necessary to all graminivorous animals, not only as a stimulant, but also as a vermifuge. The use of salt has, indeed, of late proved most beneficial in feeding cattle and sheep, and is in consequence much used by agriculturists. When the animals, in particular, lead an inactive life, it proves an excellent and necessary stimulant.

The Canine Maw-worm.—This species is extremely small, being only about half-an-inch in length, with the head ending in a very acute point, and having the tail slightly flattened, and lobed on each side. Its general colour is yellowish-white. These worms are found sometimes in great numbers in the lower intestines of dogs, and are known to have ascended through the whole intestinal canal, and even found their way into the stomach; in which case they induce vomiting, great nausea, and loathing of food.

The Marginated Round-worm.—This animal has all the appearance of the common earth-worm, but seldom grows larger than from three to four inches: it is of a pale skin-colour, or yellowish-white. The head is provided with a kind of hood, and is situated at the narrow end of the worm. This worm generally takes its lodgment in the convolutions of the small intestines, although it frequently ascends even into the stomach, and produces violent irritation. It is often found in vast numbers in a single dog.

The Chain-shaped Tape-worm.—This worm is also very common in the intestines of the dog. It is a long animal, frequently exceeding nine feet in length; and consists of a number of flat, oblong-oval articulations, or joints, each furnished with an orifice, or opening, at its margin, on the opposite side in every alternate articulation: the head is on the smaller end of the worm, and is extremely minute. This species is of a cream-coloured white.

The serrated Tape-worm.—The length of this worm is about twenty inches, with numerous rectangular articulations, the hinder ones becoming gradually broader and shorter. They are striated, or with fine, thread-like lines on the rings, and each margin is serrated or toothed, like a saw: the head is small, and the colour of the worm dirty white, or pale brown.

The Gourd Tape-worm.—This worm strongly resembles the common tape-worm of the human body, but thicker; the joints are all square, and equal, with alternate apertures on the sides. They are broad towards the tail, and surrounded with a turned margin; the colour is of a yellowish white, and opaque. They are not numerous, but a dozen have been evacuated by one dog.

Symptoms.—The dog, under the influence of worms, becomes thin and even emaciated; is dull and stupid; his eyes are heavy, and his nose swelled and dry. He continually rubs his nose with his paws. In the earlier stages of the disease he eats voraciously, but afterwards loathes his food. He has an inclination to move his tongue about in his mouth, and has a tendency to hang his under-jaw. He is often afflicted with severe pains in the abdomen, which cause him to scream violently; during sleep he has spasmodic twitchings, and frequently draws all his limbs together: the belly becomes tumid and hard, and saliva runs from his mouth while asleep. Another symptom is sitting down on his hind-quarters, and in this position dragging himself forward with his fore-paws, while his hind ones continue in a sitting posture; and it often happens that his hair stands on end, which is termed *staring* by sportsmen.

If a dog has had the distemper, and is seized with vertigo, or giddiness. there is strong reason to suspect that worms are the cause, and that they have either become very numerous, or have taken their lodgment in the upper region of the alimentary canal, or in the stomach. In the latter case, the disease is generally attended with sickness, and even violent vomiting. Worms also produce convulsions and death, from the extreme irritation of the stomach and bowels.

MODES OF CURE.

The *Canine Maw-worm* is found throughout the whole intestines of the dog, even at the extreme opening of the alimentary canal; in which case the cure is very difficult

1. The following medicines have been employed for the cure of worms, in dogs generally, but I believe with very uncertain effect, viz. :—aloes, hartshorn, and the juice of wormwood, with a mixture of sulphur: a bolus of the above about the size of a hazel-nut, rolled in butter or hogs' lard, to be given three or four times a week.

2. This composition has been also frequently tried and

has been said to be effectual :—Finely-powdered white glass, a tea-spoonful to be mixed up with butter, and to be given to the dog every day until worms are voided, and, if necessary, the quantity of glass in each dose should be increased.

3. The following specific has also been administered :—

Pulverized pewter .	1 drachm 10 grains,
Æthiop's mineral .	16 grains ;

to be mixed up with butter and a little flour, and made into small balls.

This to be given three or four times every alternate day. The dog to be kept warm. Whey or pot-liquor may be given three or four hours afterwards ; and he should continue without any grosser aliment till the medicine has taken effect. These, however, cannot be depended upon ; but the following are more likely to prove effectual :—

Powdered aloes . .	16 grains,
Powdered scammony .	8 grains ;

to be divided into from four to eight powders, according to the size of the dog, and one to be given every morning, made into a ball, with lintseed-meal and treacle. In six hours afterwards give the following injection :—

Spirit of turpentine .	2 drachms,
Olive-oil . . .	2 ounces.

These worms are very difficult to eradicate, and although thousands may be expelled, still many may remain behind, and besides, they increase with astonishing rapidity.

The Marginated Round-worm, is more easily expelled than the former ; but to ensure this completely, it is necessary to persevere with the medicine employed for some time, and to keep up a continued action in the intestinal canal. This is requisite so as to expel the eggs also.

Calomel . . .	24 grains,
Jalap, in powder .	1½ drachm,
Powder of scammony .	24 grains,
Powdered ginger . .	20 grains ;

to be divided into from eight to twelve parts, according to the size of the dog, and made into balls with lintseed-meal and treacle, and given every morning, until there is no appearance of worms or eggs in the fæces. If the dog is a very large one, the composition may be made into six doses.

Tape-worms.—These animals are very difficult to expel from the intestines, as they adhere to the inner surface of the alimentary canal with much tenacity. The most effectual cure is spirit of turpentine, which is to be administered as follows :—

Spirit of turpentine .	2 drachms,
Castor-oil . . .	1 ounce,
Powdered gum-arabic .	½ ounce ;

to be made into two or three balls, with lintseed-meal, and one to be given daily, until the worms are expelled.

Turpentine is apt to produce an irritation in the neck of the bladder ; and when the animal urinates, if a painful straining is noticed, or the urine is voided frequently, and in small quantities, it will be necessary to give lintseed-tea, boiled up with a little butchers' meat, to form a kind of soup, and let the animal drink plentifully of this. When all traces of parts of these worms disappear, it will be necessary to give tonic medicines, so as to strengthen the digestive organs, which will have the effect of preventing more effectually the recurrence of these worms. The following will be found beneficial :—

Sulphate of quinine .	12 grains,
Carbonate of iron .	1 drachm,
Sulphate of iron . .	12 grains ;

to be divided into from six to twelve powders, according to the size of the animal, and one given daily, for a week or ten days, mixed with lintseed-meal and treacle, in the form of small balls.

Castor-oil and turpentine will be found an effectual remedy for all worm complaints.

DROPSY.

This disease consists of an accumulation of water in the abdomen, and is not uncommon in dogs, and often proves fatal. It generally has its origin in some disease of the chest. It sometimes manifests itself by a strong, hard cough; the belly becomes swelled, and tense, and a want of appetite follows, with quick and difficult breathing, accompanied by great thirst, and in the more advanced stages, a considerable tendency to suffocation. A good way of testing the existence of dropsy, is to place one hand on the near side of the body, and strike the off side with the other hand, when an undulating motion will be perceived. The following specific will be found beneficial :—

Calomel	10 grains,
Powdered digitalis	10 grains,
Powdered camphor	15 grains ;

to be divided into six powders, and one to be given daily; but if for a small dog, it must be made into eight powders.

In extreme cases, tapping will afford relief, and may be performed several times, but ought not to be attempted by any one but an experienced veterinarian.

COSTIVENESS.

Dogs are very liable to costiveness, and the fæces which they void is sometimes extremely hard, and not unfrequently of a limy consistence.

Remedies.—Occasional doses of castor-oil, varying from half an ounce to two ounces, will be found the most effectual remedy for this; and its operation will be facilitated by giving the animal frequent draughts of warm oatmeal-gruel or weak broth.

COLIC.

Symptoms.—The animals labouring under this complaint are dull, restless, with inflamed eyeballs, dry and warm nose, loss of appetite; and the dog suffers considerable pain.

Remedies.—The application of stimulating embrocations applied to the belly are useful; and the warm bath, brought to a considerably high temperature, often affords relief. Half an ounce of castor-oil should be given immediately, and six drops of laudanum. This is given when the habit is costive; but when the bowels are lax, give two tablespoonfuls of the following mixture every four hours:—

Compound tincture of senna .	3 drachms,
Sweet spirit of nitre . .	½ ounce,
Compound tincture of rhubarb .	3 drachms.
Laudanum . . .	2 drachms,
Water	1 pint.

DIARRHŒA, OR LOOSENESS.

During distemper, this is a common malady; and when it happens with this complaint every means must be adopted to check its progress, as it is apt to produce great weakness, which the animal is ill able to bear, as want of appetite is too common an attendant upon distemper; and when this is the case there is a great difference in the colour of the excrement, it being sometimes very dark, at others yellow, and sometimes of an albaminous character.

The acrimonious state of the fæces produces inflammation of the anus, and a constant desire to stool, which some persons erroneously take for constipation; and under that idea give the animal cathartic medicines, which have an injurious tendency, the bowels being already too much relaxed, and not unfrequently cause the death of the animal.

Remedies.—When dogs are labouring under this complaint give the following twice or thrice daily, if the complaint is at all severe; but when not so, once a day will suffice.

Peruvian bark . .	1 scruple,
Powdered ginger . .	1 drachm,
Powdered camphor . .	4 grains,
Laudanum . . .	12 drops;

Rhubarb and magnesia have an excellent effect in absorbing and carrying downwards the acrid irritating state of the bowels.

BLEND-WATER, OR BLOODY URINE.

Dogs are frequently afflicted with this malady, which has its origin in a diseased condition of the neck of the bladder, or a rupture in the vessels of the urethra. It is also caused by fungiform growths on the penis, in which case the blood issues in almost single drops at a time. The irritation during the course of urinating causes the animal to strain, which presses on the fungi, and causes blood to issue from them.

Remedies.—When the malady proceeds from any of the two former causes, the following should be administered every day until the animal recovers:—

Peruvian bark . . .	½ drachm,
Myrrh, in powder . . .	6 grains,
Prepared kali . . .	6 grains,
Compound tincture of benzoin .	¼ ounce;

the whole to be formed into a ball.

If the complaint arises from fungi, the best plan is to have recourse to excision of them with a scalpel or sharp knife; or they may be reduced by means of caustic applications. Burnt alum may be first tried, and if it does not prove effectual, about an eighth of the quantity of red oxide of mercury should be mixed with it.

PILES.

Cause.—Confinement, heat, and dry, heating food, as well as frequent costiveness, produce piles.

Symptoms.—The anus is generally protruded, and red, which is frequently much aggravated by the dog dragging his hinder parts on the ground, from the itching and sharp pain of the parts. When they are habitual, the best appliance is the following ointment:—

Sugar of lead . . .	6 grains,
Tar	½ drachm,
Elder ointment, or hogs' lard	3 drachms

the part to be anointed with it three or four times a day.

FITS.

Dogs are very liable to be afflicted with fits of several kinds, and arising from a variety of causes.

Epileptic fits.—As in the human being, these are accompanied by severe convulsions, and they occur at all ages. The cause of these is not well understood. However, they are frequently the followers of distemper, costiveness, the presence of worms in the intestines, teething in puppies, and some affection of the brain. These are most difficult to cure, if not incurable in many instances. Bleeding often has the effect of removing fits, but aperients should always be administered; and the following will be found of much use:—

Calomel	12 grains,
Powdered foxglove . .	12 grains,
Powdered misletoe . .	2 drachms ;

to be divided into nine, twelve, or fifteen powders, according to the size of the dog, and one given every morning. Let them be made up in the form of pills, with treacle and a little lintseed-meal, and put down the animal's throat.

The natural ardour of dogs, more particularly those used in field-sports, frequently causes them to have fits, from the great excitement produced by the sight or smell of game ; more especially at the commencement of the season ; and particularly in such dogs as have not been sufficiently exercised. When they are attacked with epileptic fits in the field, the best and easiest remedy is to plunge them into water immediately, which will have the effect of rousing them. Setters are more liable to these attacks than pointers, from their more ardent temperament ; and especially if they have been subjected to severe chastisement for flushing game, which they are very apt to do at the commencement of the shooting season. Costiveness also may produce fits, and when this is the cause, we need hardly say that active purgatives are the best and speediest remedies.

It is very imprudent to allow bitches to suckle many puppies at a time, as they are frequently attacked with fits in consequence. Two or three at most are sufficient for an animal to rear. Puppies are liable to fits from the effects of teething : when this is the case, scarifying the gums will afford relief. Worms also produce fits in them ; and they are sometimes afflicted with convulsions when the distemper is approaching.

CHAPTER III.

DISEASES OF THE EXTERNAL PARTS, ETC.

DISEASES OF THE EYE.

Young dogs which are recovering from the distemper are liable to be afflicted with sore eyes; but this is only part of the disease, and he generally recovers when the disease is fairly eradicated. But should the eyes continue sore afterwards, then a seton in the neck, and washes with Goulard's extract, will facilitate the recovery.

Weak and watery eyes are not of uncommon occurrence with dogs, which when carefully examined in a strong light, will be found to be red at the bottom, as well as on the inside of the eyelids. When the animals labouring under this complaint are exposed to a strong light, they exhibit painful symptoms, as well as a great desire to be freed from its glare.

Bleeding will be necessary in this case, and a seton inserted in the neck, and a purgative administered, every second or third day, according to the recipe at page 629. Fomentations of poppy-heads or camomile-flowers should be applied as hot as the dog can bear them, and the following wash should be frequently used :—

Sugar of lead . . .	½ drachm,
Rose-water . . .	5 ounces.

After the inflammation has somewhat subsided, let the following be applied :—

White vitrol . .	10 grains,
Rose-water . . .	5 ounces.

The above may also be used for other eye complaints, as well as for injuries inflicted from blows, scratches, or punctures. When the inflammation is subdued, a bluish dimness, over the eyeballs, sometimes follows. In this event, sprinkle a little of the following powder on the eyeball :—

Sugar of lead . .	1 scruple,
Calomel . . .	1 drachm,

Cataract.—This is a disease of the crystalline lens of the eye, which becomes white and opaque, and generally of a hard, horny consistence, instead of being clear and transparent, as in its natural state. When complete, this disease causes total blindness. It may be brought on by an injury, and generally only affects the injured eye. Aged dogs are very subject to the complaint.

The only remedy for this malady, is an operation which is termed *couching;* which should only be attempted by an experienced veterinary surgeon. The operation is performed in two different ways. In the first of these, a needle is introduced, and the covering of the lens torn, and its contents depressed into the posterior chamber of the eye, where it is gradually absorbed by the vessels of the eye, called the absorbents. The second is called *extraction,* by which the lens is entirely taken out, and a small incision made with a knife in front of the eye. The latter mode is most perfect, and when neatly performed, is done without much hazard to the eye.

Washes are recommended for this complaint, but they are very unlikely to produce a cure, although they may keep down inflammation. One in very common use is Goulard's extract, or the one above recommended, with which the eye may be bathed twice or thrice daily.

EXTERNAL ULCER OF THE EAR.

This disease has by some been mistaken for canker, but it is very dissimilar. This complaint is known by a foul ulcer, which is situated on the lower edge of the flap, or one on both ears, in the form of a slit. The pain of this sore induces the dog almost continually to shake his head, which irritates the sore, and increases the discharge of matter.

The most frequent remedy is burning out the sore, by means of a cauterizer, or with some caustic substances. But the following is more effectual :—

Nitrated mercury	2 drachms,
Turner's cerate	2 drachms,
Lard	2 ounces,
Bees' wax	¼ ounce.

It must be well mixed together, and applied twice a day. The part must be covered with a cloth, well secured, otherwise the dog will remove all the ointment by scratching.

The following has also been found an effectual remedy :—

Corrosive sublimate	4 grains,
Milk of sulphur	1 scruple,
Turner's cerate	1 drachm.

The following wash may be applied when the case is not severe, and will generally prove effectual :—

Corrosive sublimate	6 grains,
Rose-water	1½ ounce,

CANKER IN THE EAR.

This consists of an eating sore, which spreads widely if not stopped in time. The most simple remedy is the following :—

Boil two ounces of shag-tobacco in a quart of water, until it is evaporated to a pint. Dip the dog's ear into it, when as warm as it will not scald the animal. This operation to be repeated every day, until the sore assumes signs of healing. Burn an old shoe, convert it into powder, and mix it with four ounces of hogs' lard, then rub the ear with it daily for a week or ten days, to make the hair grow on the parts.

The ears of a dog may become scabbed by forcing its way through hedges, &c. The above may be used as a remedy, but with double the quantity of water.

THE COMMON MANGE.

This is a common disease among dogs, and is attributed to filth, want of proper exercise, and foul feeding It is a chronic inflammation of the skin, sometimes the effect of a morbid constitutional action, and at others dependent upon contagion. Some veterinarians consider it a hereditary complaint; and it has been asserted, that if a bitch has been lined by a mangy dog, that the puppies are likely to be mangy soon after birth, and at all events they are certain to become so sooner or later. This, however, does not appear to be a clearly established fact. One thing is certain, that it is communicated by touch, and also by contagion. It is, therefore, a proper precaution to remove the diseased dog from others. When dogs are kept closely pent up, and numbers of them together, the acrid effluvia of their urine is said to induce mange. by transpiration. In this latter case the disease assumes a most virulent character.

Some authors affirm that there are four distinct kinds of mange, but we know that there are two which can easily be distinguished, namely, the common, and red-mange. The latter is more difficult to cure than the former. We shall first point out that for the more prevalent form of the disease.

Remedies.—Cleanliness is the first remedy; and, whenever it is perceived that the dog is attacked by the complaint, which will be indicated by his constantly scratching himself, recourse should be immediately had to the following mixture :—

Train-oil	1 pint,
Spirit of turpentine	½ pint,
Powdered ginger	¼ pound,
Gunpowder, finely ground	½ ounce.

The following is another remedy :—

First let the dog be well washed with lime-water, and when perfectly dry, anoint the parts affected with the following ointment, which is said to be effectual in both the common and red-mange :—

Sulphur vivum	4 ounces,
Hellebore powder	2 ounces,
Bayberry powder	2 ounces,
Spirit of turpentine	1 ounce,
Hogs' lard	½ pound.

The washing and anointing must be repeated every second day, until a cure is effected. But to remove the ointment effectually, it will be necessary to use a strong solution of soda, which of itself will have a powerful tendency to remove the complaint. Unless the state of the dog's system is bad, three or four applications generally have the effect of performing a cure. The bowels of the animal should be kept gently open with the following alterative, viz. :—

Nitre	½ drachm,
Sulphur	1 drachm.

Mr. Mackenzie, of Edinburgh, recommends the dog to have a powerful laxative every second day, and to be rubbed all over with soft-soap, and allowed to remain untouched, and then to be well washed with a scrubbing-brush and hot water ; this two or three times repeated will generally effect a cure, unless the disease is of a bad kind. If this fails, an application of common flour of sulphur, in the proportion of one ounce to two ounces of hogs' lard, applied three or four times, will generally prevail.

We have, however, in obstinate cases, found that they resisted all the above remedies, which rendered it necessary to have recourse to mercurial preparations, which it is always desirable to avoid, if possible. In such cases the animal must be kept very warm.

White precipitate . .	2 drachms,
Sulphur . . .	1½ ounce,
Hogs' lard . .	4 ounces ;

to be rubbed with the above for three or four times, every second day, first washing the dog with a strong solution of soda, after the ointment has been applied for twelve or fourteen hours.

If it be necessary to use the dog for field-sports, before the complaint is eradicated, apply a lotion of that strong water known by the name of glauber, which can be obtained at any salt-works, and rub the animal with it once a day; or, as a substitute, a solution of ground oak-bark, two ounces to a pint of water, will answer the same purpose.

In obstinate cases, give three laxative balls, one every second day, composed as follows :—

Antimony . . .	1 pound,
Sulphur . . .	4 ounces,
Syrup of buckthorn .	4 ounces.

If the above quantity of syrup is not sufficient to moisten the compound, add as much treacle as will do so. Divide the whole into balls of seven drachms each. The above should always be had in reserve for general use as a laxative, especially where many dogs are kept. Hounds should have a couple of these balls once a fortnight, during the hunting season.

The following ointment has also been successfully used for mange :—

White hellebore-root, powdered . . .	6 ounces,
Sulphur vivum . .	8 ounces,
Black pepper, powdered .	2 ounces
Sal ammoniac, finely powdered . . .	1 ounce,
Hogs' lard . . .	1 pound,
Olive-oil . . .	½ pint.

Rub the parts affected, with this, night and morning, for six or seven days, and the following purgative ball should be given, and repeated twice after it has operated, allowing an interval of two days :—

Powdered jalap . .	30 grains,
Calomel . . .	6 grains,
Ginger, powdered . .	3 grains,
Conserve of roses . .	30 grains,
Syrup of buckthorn .	1 drachm ;

to be made into a ball, and concealed in a small bit of butter. The above doses are for a fox-hound, greyhound, setter, and pointer. For larger dogs the quantity to be increased, and for smaller ones diminished.

THE RED-MANGE.

As already stated ,this is a more obstinate disease than the common. It is known by a red inflammatory state of the skin over the whole body, and is accompanied by great itching, and the skin feels hot to the touch. It often affects the roots of the hair, so that it falls off, frequently in large patches, in some instances leaving the body almost naked. The hair frequently becomes discoloured. In obstinate cases, ulceration often takes place ; and when this is observed, after washing with soft-soap, or a very strong solution of soda, as recommended in the common complaint, the scabs should be picked off, and the fresh sore rubbed with the following solution :—

Corrosive sublimate	¼ ounce,
Spirit of wine, or strong whisky	½ pint ;

which should be applied with a small piece of sponge.

The ordinary remedy is the following :—

Strong mercurial ointment	8 ounces,
Venice turpentine	2 ounces,
Hogs' lard	1 pound :

the turpentine and mercurial ointment to be well rubbed together until properly incorporated. An ounce of this to be rubbed on the parts affected daily for three days. It should be well washed off on the fourth day ; but if the redness continues on the fifth, another application will be indispensable.

It will be necessary to administer the following alterative :—

Æthiop's mineral	1 ounce,
Cream of tartar	1 ounce,
Nitre	2 drachms ;

to be divided into from sixteen to twenty-four doses, according to the size of the dog, and one given every morning and evening.

FOUL COATS.

Sometimes the coats of dogs stare, that is, the hair stands on end, and assumes an irregular disposition, which condition is termed *foul* by sportsmen. To obviate this the following ointment has been found effectual :—

Sulphur	1 pound,
Train-oil	1 quart,
Spirit of turpentine	1 pint,
Soap	½ pound

Two or three applications of the above will have the desired effect. It proceeds from an irritability of the skin. Some sportsmen use the above, as a preventive, two or three times during the season, and before the sporting-time particularly.

SORE FEET.

During the hunting and shooting seasons, dogs are very liable to be affected with sore feet: they should be frequently washed with strong brine, pot-liquor, or salt and vinegar, a handful of the former to a pint of the latter. But as it will be found easier to prevent than cure the affection, we would recommend that the feet of dogs should be washed every day, on returning from the field, with pot-liquor or brine, which will have the effect of hardening the skin.

When the feet have become sore and continue raw, let them be well washed with a solution of soda, and then the following mixture applied three or four times a day with a feather:—

Sulphuric acid . . .	6 drops,
Tincture of myrrh .	1 ounce.

WOUNDS.

Dogs are very liable to be wounded when in pursuit of game, or in their ardour in ranging to find it.

When these wounds are of a superficial kind, they will only require to be washed, and afterwards, by the dog constantly licking them, they soon heal. But where they are of a more serious character, other means must be adopted. The mode of cure will depend upon the situation and nature of the wound, and other circumstances.

We would, however, generally recommend that they should be washed with Friar's balsam, or tincture of myrrh.

But when they are severe, it would be prudent to have the advice of a veterinary surgeon.

SPRAINS AND BRUISES.

Like wounds, it would be difficult to recommend a specific which may be generally useful, as these may vary so much in situation and degree; therefore veterinary aid will be necessary; but when that cannot be easily obtained, we would recommend the following applications, to be well rubbed on the parts affected:—

Spirit of turpentine . .	1 ounce,
Spirit of wine . .	2 ounces.

Or where there is heat and swelling accompanying the sprain, the following lotion will be found the best, if diligently applied :—

Sugar of Lead . .	2 ounces,
Vinegar . . .	1 pint ;

to be kept on the part with rags well wetted in the lotion; and when the inflammation is completely removed, use the following embrocation :—

Soft soap . . .	1 ounce,
Spirit of wine . .	1 ounce,
Spirit of turpentine .	1 ounce,
Green-elder-ointment .	1 ounce.

For a strained leg or foot, the following embrocation will be found effectual in removing it :—

Camphor . . .	2 ounces,
Spirit of wine . .	2 ounces.

When the camphor is dissolved, add to it, Goulard's extract, one ounce, and the gall of an ox, and rub the part affected twice or thrice a day. Fomentations of hot water or camomile-flowers will also be of much service. For swelling of the stifle, an ounce of tincture of cantharides added to the above, will be found useful to rub the part with.

SCALDS.

The ordinary application of lime and oil is the best, to be used immediately after the dog has been scalded, taking care to cover up the part, and secure it in such a way that the dog cannot lick it off. Next day, when the heat has subsided, the animal may be permitted to lick the part, and if the blister be broken, all that will be necessary is to allow nature to work her own cure, which will be facilitated by the dog licking the part. When the scalded part has healed, it will be found denuded of hair. In order to restore it, calcine and grind to a fine powder a piece of leather, or an old shoe, and mix it with lard and wax, in the proportion of one ounce of the former to a quarter of an ounce of the latter, and rub the bald part with it daily, until the hair shows indications of growing over the whole surface.

RICKETS.

This is an affection of the joints of the legs, which it enlarges, and the limbs become crooked, and the animals are in consequence called wry-legged. This complaint is hereditary in some dogs, and those should not be bred from. It is more common in the smaller kinds of dogs, such as terriers, lap-dogs, &c. It attacks them when very young, soon after they begin to walk. Whenever puppies can walk properly, they ought to be exposed as much as possible to the open air, and have plenty of exercise, good, plain food, and be kept clean and dry, which will generally have the effect of preventing rickets.

THORNS.

During the sporting season, dogs are very liable to get thorns in their feet; and when these cannot be picked out, a poultice of ground lintseed or boiled oatmeal may be applied, the surface of which must be rubbed with butter or lard, to keep it clean. This will have the effect of sucking out the thorn. But if it fails to do so on the first application, a second must be applied.

FLEAS AND TICKS, ETC.

Dogs are very liable to be molested by these insects, which are very troublesome to them. The most effectual remedy is to rub the whole animal all over with train-oil, allow it to remain from half-an-hour to three quarters, and then wash it off with salt of tartar, or soda and warm water. Soft-soap made into a thick paste and rubbed over the body will have the same effect; it must be allowed to remain on an hour before washing it off. Warm water is all that is required.

* * *

CHAPTER IV.

OPERATIONS.

BLOOD-LETTING.

The best way to perform this operation on the dog, is to take the blood from the jugular-vein. Tie a ligature pretty tight round the animal's neck, close to the shoulders, and when the vein has risen enough to be seen distinctly, take a common lancet and make an oblique puncture in it, when it will bleed copiously. When a sufficient quantity has been taken away, remove the ligature, and the bleeding will instantly cease ; the incision will heal afterwards without any application whatever.

METHOD OF GIVING A BOLUS OR PILL.

The method of administering a bolus, pill, or other medicine to a dog, is to pull the tongue pretty far out of his mouth, then put the medicine as close to the root as possible, and when the animal draws in his tongue, the medicine will descend into his stomach.

WORMING.

Worming dogs has been considered a preventive of hydrophobia, since the time of Pliny. But how such an absurd idea should have prevailed for 1760 years, is quite unaccountable. Dr. Blain very properly says, it is a custom founded on ignorance, and should not be perpetuated by publishing written directions how to perform the operation. Concurring as we do in the opinion of Dr. Blain, we abstain from any description of the operation.

FRACTURES.

Fracture of the thigh-bone is extremely common, but is by no means so difficult of cure as might be supposed. If the flesh has been injured by the fracture, the first thing to be attended to is to get quit of the swelling and inflammation, which must be accomplished by means of fomentations of vinegar and water, until allayed. Then apply a long piece of wood, in the form of a lath, which must reach from the foot to a little way above the fracture. But before applying this, a pitch-plaster, sufficiently large to surround the thigh must be applied, and then the slip of wood firmly bound over it by means of a roller of cotton cloth, an inch and a half broad. But care must be taken not to make it too tight, otherwise the circulation may be retarded, or entirely stopped, which will in all probability terminate in mortification.

If the leg-bone is broken, then several splints of wood must surround the limb, carefully wrapped round with a bandage.

When fractures of the limbs are compound, that is, broken in two or more places, then the cure becomes more difficult and uncertain in its issue, as it is difficult for an inexperienced person to place the pieces of broken bone in their proper position. The safest plan is to have compound fractures set and attended to by veterinary surgeons.

CROPPING.

This is at least a barbarous custom, and extremely presumptuous in man to attempt to improve nature. We believe this outrageous practice originated in the barbarous ages, when dog-fighting formed an amusement amongst the fashionable. Happily this is now of rare occurrence; and we hope the time is not far distant when this, as well as the brutal practice of cock-fighting, will be prevented by an act of the legislature.

CHAPTER V.

GESTATION, PARTURITION, ETC.

OF BREEDING GENERALLY.

From the earliest times great diversity of opinion has existed respecting the proper age at which dogs should be allowed to breed, with the view of producing strong and healthy puppies.

We are informed by Aristotle, who flourished in the fourth century before the Christian era, that ancient sportsmen, for the ennobling of their race of dogs, did not suffer the male to engender till he was four years of age, and the female three ; and that the former was only allowed to propagate for eight years thereafter, and the latter for six years. They conceived that the progeny of such would be much stronger than those bred at an earlier age. This opinion does not, however, hold good, although it is found that the puppies produced by a female under twelve months, are generally weak. It is now ascertained, from patient investigation and experience, that a female should be fully twelve months old before she is allowed to engender, and that whelps produced by a dam about this age, are as good as those at any later period of the animal's life. The male ought to be at his full strength and symmetry, but not aged, as the offspring of such are generally dull and deficient in spirit.

The usual time at which females are first seized with the *furor uterinus*, is at the age of twelve months; but there are many instances where it is felt at eight, and it generally lasts about eighteen days. For the first four or five days she will not receive the embraces of the male, but keeps up a sportive dalliance with him; after which unbounded vent is given to her desires, and even with a variety of males; from the termination of which period, she is gravid nine weeks, or sixty-three days, and produces from five to twelve puppies, according to her size.

Breeders are in the habit of restraining the desire of the female; and in general only allow her to be warded two or three times, which proves as effectual as the most unrestrained commerce. Indeed, it has been found, that from six to eight puppies have been the fruits of one coitus, and in some rare instances so many as eleven.

Albertus mentions, that he saw a mastiff bitch, which brought forth at three litters, fifty whelps, viz.: nineteen at the first, eighteen at the second, and thirteen at the third litter. Some females have been known to produce puppies three times a year; but this generally has the effect of destroying their constitution. Those, therefore, who have a regard for their dogs, and wish to preserve a healthy race, will never allow the female to produce oftener than once a year.

It need hardly be remarked, that if it is wished to preserve a breed of dogs uncontaminated, all intercourse with those of different races must be strictly guarded against. The animals from which a breed is to be taken should be as perfect in their form as possible, as it would be in vain to expect handsome puppies from an ill-made sire and dam; although it not unfrequently happens, that in the case of one of the parents being cross in its make, an elegant progeny are produced, by the other possessing a more perfect symmetry, more especially when the female is beautifully formed.

But this ought never to be depended upon, unless the sire or dam have very pre-eminent qualities, which it is desirable to possess. Crosses should be carefully guarded against.

> "Consider well
> His lineage; what his father did of old,
> Chiefs of the pack, and first to climb the rock,
> Or plunge into the deep."
>
> SOMERVILLE.

In dogs of the chase, care should be taken that the dog is stout, his shape good, and colour of the right kind, his nose fine, and that he has a proper method of hunting. Be sure that he is no *babbler* or *skirter*. The former is the worst fault a hound can have, and is apt to be followed by others. Those that skeit are always unsteady and changing, and lose more foxes than they kill. If the dogs are otherwise good, this imperfection may be rectified by a more steady parent of the opposite sex.

Breeding from the same stock is to be strictly avoided, as it is found that all animals (and even man himself) soon degenerate by too close a union in blood. If, therefore, a perfect race is wished, every possible attention should be paid to obtain alliances betwixt the sexes, by animals not connected by consanguinity, or at least, not very near.

The time of producing in most animals lies with the female. In the dog species the spring is the usual season of desire, commencing generally in February or March; and this is certainly the best time of the year; for puppies whelped in summer are always stronger and more likely to be straight and firm about the joints than those of a winter litter, which often suffer materially from the cold, and become rickety.

Thus far as regards the breeding of dogs generally; but in sporting-dogs there are various opinions as to the time at which they should be bred. The strictest attention, however, should be observed in regard of both male and female being in good health, and as perfect as possible in their points of form ; their faculty of smell should also be in high perfection, although it sometimes happens that cross, ill-made dogs possess excellent qualities in this respect ; and when this is the case, and a breed is desired from them, a good male or female of the opposite sex should be selected, as the case may be.

Much vigilance is necessary on the part of the feeder, to watch the females going to heat, and whenever the slightest indication of this becomes apparent, they should immediately be separated from the rest of the pack, if dogs of chase, which will prevent quarrelling among the males. This should also be attended to with other sporting dogs. From neglect of this kind, it has not unfrequently happened that the best dogs of the pack, or the finest pointers and setters, have fallen victims to these broils.

While in pup the female should not be hunted more than the first month, as it often proves injurious to her as well as her litter. During gestation, however, moderate exercise will be found of great service in preserving her health, and is in consequence likely to give strength to her offspring.

Mr. Daniel is of opinion that winter whelps, if they survive, come in well the following season, and that they are generally hardy and handsome ; and he recommends to have no puppies later than April, as they seldom thrive in very hot weather ; and that of the early puppies, five or six should be kept, and of the later ones, not more than half that number. We, however, beg to dissent from this conclusion, for the reasons stated in a former paragraph.

When the female has littered, and the puppies have been cleaned by her tongue, it will be proper to select such as are to be kept, while those that are deemed superfluous should be immediately drowned. In the chase, a preference should be given to those having a resemblance to dogs of the pack of established worth, and possessing at the same time the strongest make, as the smaller puppies are likely to turn out weak. If a whole litter is wished to be preserved, and if it is larger than can be nursed with ease and safety by the dam, a few should be taken from her and given to a foster-mother. Sometimes, however, it is difficult to get another bitch to nurse strange puppies. A method, which has been successfully practised, is to rub the puppies so selected with a little of the foster-mother's milk, when, in general, she will carefully lick them, and adopt them as her own.

While nursing, the bitches should be well fed with flesh, broth, milk, porridge, &c., several times a day. When puppies are a few weeks old, milk should be offered them, and they will soon learn to lap it, which will greatly relieve the dams. By the end of six weeks they will be able to feed themselves, and may then be removed from the nursing-quarters. These observations apply to dogs generally.

Many of the most experienced sportsmen, and also writers on this subject, conceived that hounds may be hunted while nursing; but this is an opinion with which no physiologist or medical man can concur; for violent exercise of any kind has a strong tendency to injure the quality of the milk, and must, consequently, have a bad effect on the young progeny.

When the puppies of dogs of the chase are three or four days old the points of their tails should be twisted off. This operation is performed by placing the tail between the fore-finger and thumb; press the nail of the latter on the joint, and twist the tip of the tail gently round, and a slight pull will separate it; (but this operation should never be performed on a setter, springer, or cocker;) after which the dew-claws must be taken off with scissors.

It is necessary to give physic to females when their young ones are removed from them. Three of the following laxative balls, given every alternate day, will have the desired effect:—

Jalap, in powders . .	20 grains,
Calomel . . .	4 grains;

to be made into a small ball or pill with treacle. But during the process of drying up the milk, as little liquid as possible must be given to her, which should consist entirely of water. Whey is recommended by some veterinarians, as being a less abrupt transition from their former diet, and containing but little nutriment.

In the event of this not proving effectual, the laxative balls must be continued, and the teats of the animal rubbed twice a day with a composition of goose-grease and rum, in equal proportions; or brandy and salad-oil, used in the same way, will have a similar effect. This treatment continued for three or four days generally answers the purpose. But if, in spite of strict attention to the above appliances for dispersing the milk, it accumulates in large quantity, which will sometimes be the case, it will be necessary to draw off some of the milk by means of a nipple-glass, or sucking-pipe, to relieve the animal from the pain of her udder being distended. A mixture of warm vinegar and brandy may be also successfully applied to dry up the milk.

In breeding pointers and setters, some sportsmen are anxious to have the puppies produced at such a time as to become fit for breaking in the succeeding spring, so as to be ready for hunting in the autumn; and also that the bitch may not be in *case*, so as to prevent her from running along with the males, or to be so heavy with young that she cannot work by herself during the last part of the sporting season. This may certainly be a saving knowledge, but the opportunity of saving a breed of a good kind ought not to be sacrificed for so paltry an object.

PARTURITION, OR PUPPING.

It is no uncommon occurrence for bitches to lose their lives in pupping. Protracted labour will cause the death of the young in the womb, in which case they frequently are not discharged at the time, but come away piecemeal some days afterwards. Sometimes fits are brought on by tedious labours, in which case give the following specific :—

Æther . . .	1 drachm,
Laudanum . . .	1 drachm,
Strong ale . . .	2 ounces.

CHAPTER VI.

FEEDING, MANAGEMENT, TRAINING, &c.

The natural food of the dog is flesh, and it is found that those in a wild state prefer it to any other kind of nutriment. It is this desire that gives to him the instinctive property of pursuing other animals; and without this craving of nature he never would hunt. Many have been of opinion that to feed a dog on flesh destroys the acuteness of his olfactory sense. This doctrine we most positively deny, and that, too, upon the most common principles of physiology; for it is difficult to conceive how any animal should be formed with a natural desire for a particular sort of food, the use of which would prove destructive to some of his faculties.

Although, however, the dog is strictly a carnivorous animal, yet he can subsist on many kinds of food ; which is the case, also, with various other animals more highly carnivorous in their nature. It has been said of man himself, that feeding on flesh destroys his sense of smell in some degree ; and in support of this statement it is alleged, that certain natives of India, who feed entirely on grain, have the olfactory sense in such a degree of perfection, that they can distinguish the smell of the water of one spring from that of another. But such accuracy of discrimination has been satisfactorily ascertained to be entirely the result of practice.

The nutriment best adapted for sporting dogs, so as to enable them to perform their work well, should consist of at least two-thirds of flesh, with a judicious mixture of farinaceous vegetables. It is an established fact, that dogs in a domesticated state invariably become lean if fed entirely upon flesh.

Good water is of great consequence to the health of dogs, as they drink frequently and copiously, and particularly setters; but the idea that dogs being kept long without water produces canine madness, is a vulgar prejudice.

The dog is naturally a voracious animal ; and yet he can endure hunger for a very great length of time, and be brought by habit to subsist on a very scanty meal. In the Memoirs of the Academy of Sciences, it is mentioned, that a bitch which was forgot in a country house, where she had access to no other nourishment, lived forty days on the wool of an old mattress, which she had torn to pieces.

An extraordinary instance of a similar kind occurred with a terrier bitch belonging to a friend of my own. One day, when following her master through a grass park near Gilmerton, it happened that she started a hare. During the pursuit her master suddenly lost sight of her, and in a few days she was considered either killed or lost. Six weeks afterwards, a person happening to look down the shaft of an old coal-pit, was surprised by hearing a dog howling. He immediately returned to the village, and having procured a hand-basket, let it down by a rope into the shaft; the dog instantly leapt into it, and on being brought to the surface, it turned out to be Gipsy, the lost terrier bitch of my friend, worn to perfect skin and bone. How she had existed in this subterranean abode it is impossible to tell.

Staghounds, foxhounds, harriers, and beagles, are generally fed on oatmeal; and the older it is the better, so that it is not fusty. Store sufficient for twelve or eighteen months' consumption ought, therefore, always to be kept by those who have a pack. The meal should be well dried and broken into grits, but not too fine. It is best kept in bins in a granary, well trodden down. Some persons are in the habit of using barleymeal, but it is not nearly so nutritious as the former. Others are of opinion that oatmeal and barleymeal, in equal proportions, form a preferable food. But nothing is better than oatmeal-porridge, with the addition of a little milk, and occasionally the kitchen-offal, such as remnants of butchers' meat, broth, and soups, the raspings and refuse of bakers' shops, or hard, coarse, sea-biscuit, well soaked and boiled with bullocks' liver or horse-flesh. Well-boiled greens are an excellent addition to the food of all dogs, and may be given twice a week; but this ought to be discontinued during the shooting season with pointers, setters, cockers, and greyhounds; and also during the hunting-season with fox-hounds, harriers, and beagles, as they are apt to render the bowels too open for hard work. The flesh should be first thoroughly boiled, and then taken out before the oatmeal is added to the broth.

Dogs which are regularly worked are better for having two meals a day, the principal one of course should be given in the evening. Nothing is better than good, wholesome horse-flesh, (avoiding by all means such as have died full of drugs; but let it be those which have been killed, and in a healthy state,) boiled, and the liquor mixed well with the oatmeal-porridge, the quantity of each about equal. If horse-flesh is not to be had, cracklings or greaves are a proper substitute, if they are good. They are generally broken small, and mixed with about half the quantity of oatmeal, and boiling water poured on them, and well stirred together; or they may be boiled together like porridge. Dogs, like men, tire of the same kind of food; therefore, a judicious feeder, like a good cook, will contrive to vary his bill of fare. Porridge and milk, the offal of the kitchen, the offal of bullocks or sheep, which should be well boiled, make an excellent variety; but we would by no means recommend a too frequent repetition of the latter food. Potatoes make also a good variety, and although not so nutritious as oatmeal, they are less heating. Care should be taken never to present more to a dog than he will eat with a good appetite; and when oatmeal and barleymeal are used, mixed, the former should be first boiled for twenty minutes, and then the other added, and boiled only for about eight or ten minutes. The latter meal should, however, never be given in the hunting season, as it is too heating, and occasions the dogs to be perpetually drinking. Their food should be given to them pretty thick, as thin porridge does not stay in the stomach so well; and it should be well cooled before being presented to them. The feeding-troughs for hounds should be wide at the bottom, and not exceeding three feet in length. They should be thoroughly cleaned out, and scalded with hot water, every second day. Dogs should always have plenty of fresh water.

During the hunting season hounds should have sulphur mixed up with their meals once a week, in the proportion of three drachms to each. At the end of the season, the same quantity of sulphur should be given, with the addition of one and a half drachm of antimony. After a hard day's work an entire meal of horse-flesh should be given them, and as newly killed as possible; and when this cannot be had, bullocks' paunches or sheep's trotters, both of which ought to be well boiled.

GREYHOUNDS

Should be fed principally on animal food, such as sheep's trotters or neats' feet, boiled or stewed down, and mixed with bread or oatmeal, and given moderately in the morning and afternoon, (the dog never being allowed, on any occasion, to eat a great quantity at a time,) or on other hard meat, as it will enlarge and strengthen the muscular fibre without increasing the cellular tissue and adipose substance, which has an invariable tendency to affect their breathing The butchers' meat should be of the best quality. Within a few days of a coursing-match, some sportsmen give each dog two or three ounces of beefsteak, moderately fried in a little brandy, with two or three teaspoonfuls of assafœtida dropped into it. This braces their stomachs, and produces other stimulating effects. After they have been coursed, they should be well brushed all over, a little oil being used in the operation.

The kennels of greyhounds should be kept particularly warm and dry, and at the same time they ought to be properly ventilated. Indeed, pure air is an essential requisite to the health and vigour of all animals.

Nothing is of greater consequence to the health and efficiency of dogs than cleanliness. Their kennels ought to be frequently replenished with dry and clean straw, and their apartments well aired. Their beds should, if possible, be placed on a wooden bench, or, at least, on some dry place. On attention to cleanliness also depends the perfection of their olfactory nerves, and sense of smelling; for if accustomed to disagreeable effluvia, a dog will be ill-adapted to trace the fail of a deer, or scent of a fox, through greasy fallows or ground tainted by the grazing of sheep.

OF TRAINING FOXHOUNDS.

The first thing to be attended to in young dogs of all kinds, is to make them understand their names well, and answer to them, before training, for which they should be rewarded and caressed. After foxhounds have learned to follow freely, they should be coupled, and led out amongst sheep, deer, &c., and made to understand that such is not their game. But when they have arrived at the locality where sheep and deer are, they must be let loose, and only a few at a time; and if they attempt to run after them, they must be severely chastised, and the cry of *'ware sheep*, be often repeated to them, which cry will generally, on future occasions, have the effect of stopping them from sheep-running, without the necessity of using the whip. Great care is necessary at the offset, to prevent them from worrying a sheep, which they will sometimes do under the management of careless trainers. If they are allowed to taste the blood, it will be very difficult afterwards to break them of this bad habit.

Young hounds should be often walked about the courts of the kennel, followed by the whipper-in, who ought to rate them after the huntsmen. They should also be frequently taken out with people on foot, which teaches them to be more tractable, attentive, and much more manageable. It is usual to take them out to their walks in a country where they are to be hunted, as the sooner they acquire a knowledge of it the better ; and when they are thrown out, or left behind, are more likely to find their way home.

In entering foxhounds, it should always be at their own game, although some are foolish enough to begin them with hares, which just requires a second training to break them from that pursuit. Nothing is so good for rendering young hounds obedient as walking them frequently out amongst sheep, hares, and deer, and restraining their pursuits of these animals. This probation will teach them to be steady. A fox-cub should then be turned out before them, in company of some old hounds, as leaders, which has the effect of training them in a short time instinctively, as it were, to hunt themselves. After they have tasted blood, it will be more difficult to repress their ardour than to excite it. Every means of encouraging them should be used in the earlier stages of their training, and punishment only administered after they have made some progress. In flogging a hound for a fault, the whipper-in should use his voice at the same time ; this teaches him to know for what he is beaten. It has been recommended, and successfully adopted, that a live hare should be introduced into the kennel, and the dogs soundly flogged whenever they attempt to approach her.

Hounds at their first entering cannot be encouraged too much. When they are become hardy, love a scent, and begin to know what is *right*, it will be soon enough to chastise them for doing *wrong;* in which case one severe beating will save a deal of trouble. It should be recommended to the whipper-in, when he flogs a hound, to make use of his voice as well as his whip ; and let him remember that a smack of the whip is often of as much use as the lash, to one that has felt it. If any are very unsteady, it will not be amiss to send them out by themselves, when the men go out to exercise their horses. If hares are plentiful in the neighbourhood, let some be found sitting, and turned out before them, and you will soon find that the most riotous will not run after them. If they are to be made steady from deer, they should see them often, and they will not regard them. Flogging hounds frequently in kennel is a practice with many huntsmen, but which ought on no account to be permitted: it is unreasonable, unjust, and cruel. Hounds that are old offenders, that are very riotous, and at the same time very cunning, may be difficult to catch—such hounds may be excepted—they deserve punishment, whenever it happens, and huntsmen of course should not fail to give it them *when they can.* This we will allow is a particular case, and necessity may excuse it; but let not the peace and quiet of the kennel be often thus disturbed. When hounds offend, punish them—when caught in the act, then let them suffer—and if severity be exercised, let it be just.

TRAINING OF POINTERS AND SETTERS.

One of the earliest lessons which a dog should be taught is obedience ; this can be accomplished by walking him out near home, and when he ranges to too great a distance he must be called back, using the words *here*, or *come in.* To teach him to go behind, the words *back*, or *behind,* should be used.

At this period it will be proper to accustom the dog to be tied up in a stable, but not for too long a time at the outset, as a dog's growth is apt to be cramped by confining him too much at an early age. Where the situation is favourable, dogs under twelve months should always be allowed to go at liberty through the day, taking care to tie them up at night, because in strange quarters, where this restraint may be necessary, if not used to it, they may howl, and disturb a whole neighbourhood.

Dogs should, if possible, receive their education in an open moorland country, where there are neither pheasants nor rabbits. They will then have full scope for their faculties, acquire a gallant range, and learn to quarter their ground properly. In this process the words used should be few and simple, and accompanied by signs, which ought ultimately to become their substitutes; as we hold, that when a dog is thoroughly *made*, a whistle or a signal will be sufficient for his guidance in the field. To the young sportsman, the Vocabulary and Maxims which follow may be useful, and tend to impress him with a proper notion of the business in hand.

VOCABULARY.

Hey away hey on, good dog!—is a general encouragement to general beat.

Have a care.—A caution when you perceive him pressing rashly upon his birds, and in danger of springing them.

Hold up, good dog.—When he is diffident of following up his game, or dwelling upon a false haunt.

Take heed, or to-ho!—A caution to him when he fixes to his point, and warning to other dogs to back, accompanied by holding up the right hand, the same as to down.

Down charge.—The word of command, instantly after firing, which must be *imperative*.

Seek—dead.—A notice for him to go in search of dead or wounded birds.

Ware bird, or *Ware dead.*—A check, when he attempts to *mouth* or *snap*, a dead or dying bird.

Ware-chase !—A challenge (loud and sharp) for chasing birds upon the wing.

Ware hare !—A check of decisive recall from an unlawful pursuit.

Ware lark !—A summons to cease from puzzling on a worthless haunt.

Gone, gone !—A notice that birds are away ; and signal to go on.

Come in, or *Come in here.*—Or the whistle ; a summons he should promptly obey, and come in to heel.

The following should be most strictly attended to.

MAXIMS.

Never let your dog have a will of his own ; but impress upon him, from the first, that your *command* is to be the rule of his actions ; and

Never allow him to ramble about the neighbourhood alone, or at the risk of falling into bad company. "Evil communications," &c.

Never take the field without your whip : it is the only legitimate weapon of punishment ; and the sight of it may, in many instances, save the skin of your pupil.

Never pass a blunder unnoticed, nor a fault unpunished : nevertheless, "love mercy." Keep your pupil down *under lecture* till you are friends again, then *hey-on !*

Never administer punishment without endeavouring to make him understand the nature of his offence—*ware chase ! take heed !* or *down charge !* as the case may be,—duly impressed upon him.

Never avenge upon your dog your own errors in shooting ; neither let your anxiety to bag a bird induce you to join him in a race for the possession thereof. Footing outwinged birds is the finest opportunity you have of developing his powers, and rather lose the bird than the advantage of such a lesson.

Never permit a race after a hare; therefore never be tempted to shoot at one which rises before your dog. In a case of necessity shoot her in her seat.

Never head your dog, nor let him trifle his time behind you; but keep him a-head in his beat, and go hand-in-hand with him up to his point.

Never allow your dog to break field, that is, make off into another field before his master, or to hunt out of your sight at any time. Neither let him take another dog's point out of his teeth, but make him back up at a respectful distance; or, which is better, *lie close* till desired to go on.

Never hunt a dog when tired down, lest he become a dealer in false points, and lose his gallantry of range.

Do not suffer your dog to ramble when you are going to or returning from the field, but keep him strictly to your heel. It is not in the way of business.

By way of preparation for taking the field, (which may be as soon after six months old as convenient,) we trust the master or keeper of young pointers or setters has betimes accustomed them to know their names distinctly, and answer to them, and to prostrate themselves to the imperious *down* and *uplifted hand*. *Down charge* should also be taught at home, as blinking shot on the field is one of the worst evils which can befall us. This can be accomplished at small expense of gunpowder—reward and caresses with puppies. Sheep and poultry should likewise be made familiar to them and respected. If a young dog makes a mistake in the flock or poultry-yard, the whip will cure him; but if an old one takes to such practices, to the gallows with him! he is never to be trusted.* Every sportman, we presume, will understand the advantage of giving a young dog the wind, against which he should take his range, making regular tacks, like a vessel beating up to windward. If he stretches too far, to the one hand, a whistle, a wave, and inclination of the body in another direction should bring him about. In this manner continue to work him till you see him on the haunt of game ; then caution him by *have a care—take heed!* as he is fixing to his point, and fix him with a stern, authoritative *down!* Keep him to his point, and if the birds lie, make a circuit round them, keeping your eye strictly upon the dog, checking every attempt to move with the uplifted hand and *down!* When you see him reconciled to lie close, give the word, *hold up!* to your birds. If he is diffident, pat and encourage him with kind words ; if too forward, check him. When the birds spring, should he pursue them, *ware chase!* must be thundered in his ears, which may perhaps stop him ; if not, have patience, keep your station, and he will return after his rioting is over. Beware of severity now, lest you check him ; but lead him again to the haunt of the birds, and there lecture him—*take heed, sir! down!* At this stage of the business a check-cord, a few yards in length, may be of advantage to prevent him from bolting in or escaping under punishment. When you have got him steady to his point, you may proceed to *down charge!* to which we have supposed the pupil ready drilled ; nevertheless, when a bird drops, he may break in, and this should be instantly and invariably resisted with *down charge! ware dead!* and the application of the whip when persisted in.

---

* The following specimen of the "tender mercies" of a reverend

We now come to the important act of bagging the birds

---

sportman may amuse if not instruct.— " To break a *sheep-biting* dog, take some wool off a sheep's rump, steep it in train oil, put it in the dog's jaws, and *sew up his mouth.* For killing poultry, *boil* a chicken in its feathers, take it hot from the boiler, squeeze the water from it, and put it into his jaws, *and tie them together.*"—DANIEL, iii. p. 337.

which are down. *Seek dead* is an easy process if they are dead; but, if birds are winged and run, your dog will require great indulgence and encouragement in footing them out, till experience teaches him to distinguish the fail of a wounded bird from that of one which is not. If he make it out, caress him with *seek dead! good dog!* &c., laying the bird before his nose and feet; but never permitting him to mouth or pull the feathers off it. The perfecting a dog in this branch of education, which enables him to road out the scattered birds of a covey through all their doublings, adds more to the pleasure of a really scientific votary of the trigger than perhaps any other, and, therefore, should be *patiently* and *particularly* attended to. When we have got two or more so far in their course, we may proceed to hunt them in company, and learn them to back, which will not be difficult, if they are decidedly subject to the *take heed—down!* Some are in the practice of making their dogs back up the dog which has the point: we prefer having them to drop and lie till he makes out his birds, which he is entitled to do, and ought to show the same respect in turn. Dogs are not exempt from jealousy, and often break through the rules when a rival is at hand. When in company they should hunt in an independent manner, crossing and quartering their ground in opposite courses, and not following at the tail of one another. When a dog is found to be slowish in this respect, he should be hunted with a strange one, or alone; he may thus be made to act for himself.

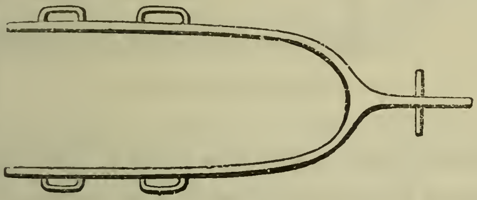
If in following up this system, we have brought them to have a gallant range, quarter their ground properly, point, back, lie-charge, and foot out their birds correctly, we are in the high road to perfection; this, however, is not to be attained in a few weeks, or months, but is the reward of continued care and perseverance. But whatever rules may be laid down, much must be left to the common sense and discernment of the trainer, as a passionate or stupid man can never make a first-rate dog.

Spring is the best time for training dogs, as the birds are then paired, and lie better, and are not so easily flushed as after the breeding-season. Besides being less numerous at that season, the game are not so likely to excite the dog. But a dog cannot be expected to be rendered quite stanch until a few birds have been killed before him. After this, and about the beginning of July, the young dogs ought to be taken for a few weeks to the moors, to be hunted with steady dogs, and blank shots fired over them, so as to prepare them for their work when the season commences. Even old dogs are the better for this occasionally.

It is of great importance to choose a proper day for training—such a one as the scent lies well with. The air should be at its mean gravity, rather moist, but inclining to grow drier, with a mild and gentle breeze. The moderate gravity buoys up the scent, and enables the dog more readily to find his game without lowering his head, or inclining to *rake.*

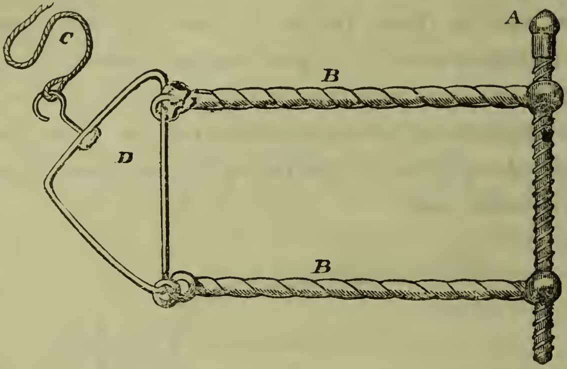
A good property in a dog, is to hunt with his nose high, as in this way he will find more birds than when he *rakes,* that is, runs with his nose close to the ground, and follows the bird by tracking. Whenever this vice is observed, he should be called to in an angry tone of voice to *hold up!* or *up-head!* This may often flurry him, but after a little practice he will soon learn to take the wind of his own accord, and hunt high. If a dog obstinately persists in *raking* there is little hopes of his ever turning out a good ranger, and he should be thrown aside. If anything will break him of this very bad fault, it will be the *puzzle.* This instrument is made of a piece of hard-wood or fir, one foot in length, and an inch and a half in breadth, tapering a little at one end; at the broader end there are two holes running longitudinally, through which the collar of the dog is put, and the whole is buckled round his neck : the piece of wood being projected beyond his nose, is then fastened with a piece of leather thong round his jaw ; by this means the peg protending seven or eight inches beyond his muzzle, effectually prevents him from putting his nose to the ground.

The following is a representation of an iron puzzle, recommended by Colonel Hawker, which is more convenient than a wooden one.



When a dog perfectly knows his game, it is time to bring him under complete discipline and obedience. He should be taught, before being brought to the field, to lie down the instant he is desired, by repeating to him the word *down!* If he is unruly, it will be necessary to use the *trash-cord,* which is a rope or strong cord, about twenty yards in length, attached to his collar, which he is allowed to drag after him while ranging. Endeavour always to keep within reach of the cord, and when it is necessary to call him, check him smartly with it, if he fails to obey. This, repeated several times, in general has the effect of teaching him to come at call. When expedient, he should be caressed, and rewarded with a bit of bread, and this should be done as often as he yields his due obedience.

The *check-collar* is an excellent instrument for this purpose, and has been found more effectual in curing dogs of these bad habits than the trash-cord. The following representation of one will be easily understood. The whole is made of iron.



A is a screw which keeps the sides of the collar at the proper distance from each other, and by which they are adjusted to the thickness of the dog's neck ; it rests upon the back of his neck, above the collar. It is necessary to unscrew this, to admit the dog's head. *B B*, the sides of the collar. *D*, a triangle which the rope *C* is fastened to, and which, being pulled, draws the sides together, and presses severely upon the wind-pipe of the dog, by the external pressure. It will be observed, that this triangle is attached to the sides of the collar by small rings, passing through a hole at the end of each side. The harder the rope is pulled the more it presses on the dog's throat.

RETRIEVERS.

Gentlemen who keep large establishments of sporting dogs generally keep one or two retrievers for the express purpose of finding lost and wounded game, and hence their name *retrievers*. These consist of the Newfoundland dog, the greater and lesser water-dogs, and the large water-spaniel. The last is decidedly the best adapted for general use, from the qualities which he possesses, and which will be more particularly described when treating of the specific character of sporting dogs. Genuine dogs of this last kind are now very rare in Great Britain. The mode of training is similar to that employed in teaching a water-dog to search for, and fetch and carry his game. They ought to know well the distinction betwixt *fur* and *feather*, otherwise they can never be adepts in retrieving. They should be carefully instructed and encouraged to *carry kindly*, that is, without mouthing their game in a rough manner, and they should invariably be instructed to *lie charge*.

WATER-DOGS.

In the shooting of wild-fowl, various dogs are used to fetch the birds out of the water as soon as shot. The above-mentioned dogs, or retrievers, are all fitted for this sport; and sometimes the poodle, or small water-dog, will be found extremely useful, particularly if he is tolerably large, as he is a rapid and expert swimmer and diver, and very ardent in his temperament. There will be no difficulty in teaching any of the above varieties to take the water, as they are impelled by a natural instinct to do so.

When puppies are five or six months old, they should be taught to fetch and carry, as a preliminary to breaking them. This is easily done by throwing a glove or other article to them in the house, or during a walk, and desiring them to fetch it. With young dogs, the most gentle means are certainly the best; and when any animal proves obstinate, his correction should be of a moderate kind; and if he seems much disheartened by beating, it will be best to suspend teaching for a time, and in the interim he may be propitiated with gentle caresses.

A method which has been successfully employed in training the dogs under consideration is, to get a rabbit's skin, stuffed, and begin by tossing it about a room. When the dog, which shôuld have a small line attached to his collar, takes up the skin, bring him to you by a gentle pull, with the skin in his mouth ; encourage him three or four times, and then take the line off. When the dog begins to enjoy this sport, take a small line and run it through a pulley fixed to the ceiling; then tie the rabbit's skin to one end of the line, and keep the other in your hand ; after this, fire a pistol, and let the skin drop. The dog will soon become fond of the sport, and will thereafter readily bring every head of game and wild-fowl that is shot. After some proficiency is made, take two or three together into a room, fire the pistol, and order first one dog, and then another to bring the skin: with a little practice, they will soon be perfect.

Should all these means prove unavailing, the task ought to be abandoned until he is old enough to be broken in; and he will then be better able to bear correction, and to understand for what cause it is inflicted.

Recourse must next be had to throwing a piece of wood into the water, and desiring the dog to fetch it out, which he will soon do by a little practice.

GREYHOUNDS.

The varieties and qualities of these dogs will be pointed out in our specific account of them.

Greyhound puppies should be kept extremely warm, being very tender dogs. They never grow straight if exposed to much cold ; and where gentlemen have not appropriate establishments for this purpose, we would recommend that they be allowed to run about the kitchen fire-side ; although in this situation they are liable to accidents.

The time for trying and training greyhounds is at the age of twelve months, although fifteen months is soon enough. Some sportsmen enter and try them at ten months; but this is by no means to be recommended, as they are apt to get strained, if the course should happen to be long and severe, and, in many cases, they never get the better of an exertion of this kind at so early an age. They require but little training, as they are endowed with an instinctive propensity to course; and in some greyhounds their ardour is so great, that it is almost impossible to restrain them. They ought always to be entered at first with a trained dog of known abilities; and they should never be allowed to suppose, after having tasted blood, that a hare can escape them; and, on this account, ought never to be slipped at a hare when jaded and exhausted, or when too far a-head to be overtaken.

When they have been taught properly to know their game, the next thing to be attended to is to accustom them to the slips, and when a hare is found, a distinct stand should be made by their keepers, and the words *so-ho!* several times repeated in a firm manner; and the young dogs should never be slipped until the hare is at some distance, lest, being over anxious to possess it, they strain their limbs too much.

The training of a greyhound requires from three to six weeks, the time, however, depending much upon the condition and constitution at the commencement. If too fat, it is necessary to begin by administering laxatives. The exercise ought to be on turf, and occasionally on the road, with a horse, and by hard galloping, to strengthen their wind, as well as to keep their claws short; also in the morning and afternoon, before feeding, at first gently, and for an hour and a half at each time. As the training advances, and the condition of the dog improves, it should be more severe and of shorter duration, till the greyhound is capable of accompanying a horse at speed for a couple of miles, without showing any signs of distress. After severe exercise dogs should be walked for a quarter of an hour, and then returned to the kennel, and brushed, cleaned, and fed. The brushing and cleaning removes all scurf, &c., from the skin, and renders the animal more cheerful and active.

No remedy has yet been found to prevent a greyhound from running *false* or *cunning;* that is, in place of following close after the hare, and capturing it by superior speed, to endeavour to cut off its retreat, by making towards a vacant space in a wall or hole, through which hares are in the habit of escaping. It is a propensity which greyhounds are apt to indulge in when they have run frequently over the same ground ; and as soon as they take to it, their previous excellence, let it have been ever so great, becomes a dead letter, as they are no longer to be depended on in running matches.

THE KENNEL.

We cannot do better than give Mr. Beckford's directions respecting the management of the kennel, who was one of the most experienced sportsmen of his day.

"Cleanliness is not only absolutely necessary to the nose of the hound, but also to the preservation of his health. Dogs are naturally clean animals ; they seldom, when they can help it, dung where they lie ; air and fresh straw are necessary to keep them healthy. They are subject to the mange, a disorder to which poverty and nastiness do very much contribute. This, though easily stopped at its first appearance, if suffered to continue long, greatly lessens the power of the animal ; and the remedies which must then be used, being in themselves violent, often injure his constitution : it had better be prevented. Let the kennel, therefore, be your particular care.

> ' Upon some little eminence erect,
> And fronting to the ruddy dawn ; its courts
> On either hand wide op'ning, to receive
> The sun's all-cheering beams, when mild he shines,
> And gilds the mountain tops.'

Such as Somerville directs may be the situation ; its size must be suited to the number of its inhabitants ; the architecture of it may be conformable to your own taste.

"However deserving your confidence, still it should be the care of the master to see the state of the kennel frequently. Two kennels are absolutely necessary to the well-being of the hounds : when there is but one, it is seldom sweet ; and when cleaned out, the hounds, particularly in winter, suffer both whilst it is cleaning, and as long as it remains wet afterwards. To be more clearly understood, I shall call one of these the hunting-kennel, by which I mean, that kennel into which the hounds are drafted which are to hunt the next day. Used always to the same kennel, they will be drafted with little trouble; they will answer to their names more readily, and you may count your hounds into the kennel with as much ease as a shepherd counts his sheep out of the fold.

"When the feeder comes to the kennel in the morning, he should let out the hounds into the outer court, at the same time opening the door of the hunting-kennel, as want of rest, or bad weather, may incline them to go into it. The lodging-room should then be cleaned out, the doors and windows of it opened, the litter shaken up, and the whole kennel made sweet and clean before the hounds return to it again. The great court and the other kennels are not less to be attended to, nor should any omission that is hurtful to the hounds be passed over in silence.

"The floor of each lodging-room should be bricked, and sloped on both sides, to run to the centre, with a gutter left to carry off the water, that when they are washed they may be soon dry. If water should stand through any fault of the floor, it should be carefully mopped up, for as warmth is in the greatest degree necessary after work, so damps are equally prejudicial. Orders given without skill are seldom well obeyed; and when the master is either ignorant or inattentive, the servants will be idle.

"Contrary to the usual practice in building kennels, there should be three doors, two in the front, and one in the back; the last to have a lattice window in it, with a wooden shutter, which is constantly to be kept close when the hounds are in, except in summer, when it should be left open all day. This door answers two very necessary purposes: it gives an opportunity of carrying out the straw when the lodging-room is cleaned, and as it is opposite to the window, will be the means to let in a thorough air, which will greatly contribute to the keeping it sweet and wholesome. The other doors will be of use in drying the rooms, when the hounds are out; and as one is to be kept shut, and the others hooked back, (allowing just room for a dog to pass,) they are not liable to any objection. The great window, in the centre, should have a folding shutter; half or the whole of which may be closed at nights, according to the weather; and the kennels by that means may be kept warm or cool."

The two great lodging-rooms are exactly similar, and having a court belonging to each, are distinct kennels, situate at opposite ends of the building. In the centre is the boiling-house, and feeding-yard; a lesser kennel, either for hounds that are drafted off, and those that are sick and lame, or for any other required purpose, is on each side; at the back of which, as they are but half the depth of the two larger kennels, are places for coals, &c., for the use of the kennel. There is also a small building in the rear for the accommodation of bitches in heat The inner-court floors should be bricked or flagged, and sloping towards the centre, like those of the lodging-rooms ; and water, brought in by a leaden pipe, should run through the channel in the middle. In the centre of each court is a well sufficiently large to dip a bucket in to clean the kennels : to keep it from wanting repair it should be faced with stone. A wooden cover should be fixed over the well of the feeding yard.

The benches, which must be open to let the urine through, should have hinges and hooks in the wall, that they may fold up when the kennel is washed ; let them be made as low as possible, that when a hound is tired he may have no difficulty in jumping up, and at no time should the space under it be so great that he will be able to creep under.

A large bricked court in front, having a grass court adjoining, and a brook running through the middle of it, completes the kennel. This court should be planted round, and also have some lime and horse-chestnut trees near the centre for shade ; some posts, bound round with galbanum, may be placed to prevent the hounds urining against the trees. The brook may be used as a cold bath, for hounds lamed in the stifle and strained. A high pale should inclose the whole, which, to the height of four feet should be close ; the other open, two inches wide. At the back of the kennel should be a thatched house, and fenced up at the sides, to contain at least a load of straw ; a pit for receiving the dung, and a gallows for the flesh. If a piece of ground adjoining the kennel can be enclosed for such dog-horses as may be brought alive, it will be of great service, as the disorders of condemned horses are not always to be discovered, and may be dangerous to others; the hounds may also be brought into this field to empty themselves after feeding; and the draft for the next day's hunting can be here made with greater accuracy than when confined in the kennel.

Should ticks at any time be troublesome, the walls of the kennel should be well washed; if that does not destroy them, white-washing should then be adopted.

When the hunting season is over, one kennel will suffice; the other, with the grass-yard adjoining to it, may be allowed to the young hounds. This separation, which should continue till the season commences, is necessary, as it prevents many accidents which might happen at this time of the year. Should there be conveniences, the dogs being kept separate from the bitches during the summer months, will be all the better. When hounds are very riotous, the feeder may sleep in a cot in the adjoining kennel: if well chastised at the first quarrel, his voice will be sufficient afterwards.

CHAPTER VII.

DIFFERENT DOGS, USED IN FIELD-SPORTS AND FOR DOMESTIC PURPOSES, WATCH-DOGS, ETC.

I HAVE already said that dogs, in all their varieties of form, are but one species, modified and altered by adventitious circumstances. Climate, feeding, crossing one breed with another, accident, and education, all combining to give that almost infinite variety of form and intelligence now to be met with amongst dogs of every country and climate. How the distinct races which have characters and propensities peculiar to themselves were originally produced it is impossible now to tell. If care is taken to prevent these from commingling with spurious blood, it is certain that by the result of education, the habits to which they have been trained have become hereditary. Many instances have occurred where pointer pups have lost their parent, and been suckled by a bitch of a totally different breed; and upon being taken into a field, for the first time, have pointed game.

The subjugation and domestication of the dog by man may be esteemed as one of the most important conquests which he has made in the animal kingdom.

Without the vices of man, nature has formed the dog with an ardour and purity of attachment, which, when once matured, appears unsullied and inviolable. His whole ambition seems a desire to execute the commands of his master and to yield implicit obedience to his every wish; while he, at the same time, has a great dread of giving offence. His whole actions are marked by zeal, vigour, and gratitude, for the little kindnesses he receives at the hand of his master. He seems perfectly sensible of favours bestowed on him. Under correction, whether deserved or not, he in general displays a degree of firmness, by submitting to, and not avoiding chastisement; while with conciliating and impressive looks and supplications he endeavours to allay the wrath of his chastiser, and will lick the hand by which the blows are inflicted. Every kindness he receives from his master is remembered, while his too often undeserved punishment is speedily forgotten. But, on the other hand, he will act quite differently with strangers, as he will boldly protect himself against an unmerited injury, and will seldom forget it.

To illustrate the services of this faithful animal, we shall quote the reflections and remarks of Mr. Burchell, given in his "Travels in Africa."

"Our pack of dogs," says he, "consisted of about five and twenty, of various sorts and sizes. This variety, though not altogether intentional, as I was obliged to take any that could be procured, was of the greatest service on such an expedition, as I observed that some gave notice of service in one way, and some in another. Some were more disposed to watch against men, and others against wild beasts; some discovered an enemy by their quickness of hearing, others by that of scent; some were useful for speed in pursuing game; some for their vigilance and barking; and others for their courage in holding ferocious animals at bay. So large a pack was not, indeed, maintained without adding greatly to our care and trouble, in supplying them with meat and water, for it was sometimes difficult to procure them enough of the latter; but their services were invaluable, often contributing to our safety, and always to our ease, by their constant vigilance; as we felt a confidence that no danger could approach us at night, without being announced by their barking. No circumstance could render the value and fidelity of these animals so conspicuous and sensible as a journey through regions which, abounding in wild beasts of almost every class, gave continual opportunities of witnessing the strong contrast in their habits, between the ferocious beasts of prey, which fly at the approach of man, and those kind, but too often injured companions of the human race. Many times, when we have been travelling over plains where those have fled the moment we appeared in sight, have I turned my eyes towards my dogs to admire their attachment, and have felt a grateful affection towards them for preferring our society to the wild liberty of other quadrupeds. Often, in the middle of the night, when all my people have been asleep around a fire, have I stood to contemplate these faithful animals lying by their side, and have learnt to esteem them for their social inclination to mankind. When wandering over pathless deserts, oppressed with vexation and distress, at the conduct of my own men, I have turned to these as my only friends, and felt how much inferior to them was man, when actuated only by selfish views. It is impossible for the naturalist, when taking a survey of the whole animal creation, not to feel the conviction, that this friendship between two creatures so different from each other, must be the result of the laws of nature ; nor can the humane and feeling mind avoid the belief, that kindness to those animals, from which he derives continued and essential assistance, is part of his moral duty."

SECTION I.—DOGS OF THE CHASE.

THE STAGHOUND.

The staghound is now the largest and most powerful of all the dogs which go under the general denomination of hound. He is held in higher estimation than any other dog of the chase, and has a most commanding and dignified aspect.

The staghounds exclusively devoted to that sport, in the royal establishment in this country, it is well known, are an improved breed, produced by a cross between the old English southern-hound, and the fleeter foxhound, grafted upon the bloodhound.

It has been asserted by the most celebrated naturalists, that the hound, harrier, turnspit, water-dog, and spaniel are all sprung from the same race ; and there seems to be strong reasons for believing this to be the case, as their forms and instinctive properties are nearly allied in all these kinds :

the principal difference consisting in the length of their legs and the size of their ears, which are in all of them soft in their texture and pendulous. The head is large, broad, and shorter in proportion than that of the foxhound, with wider nostrils, and the hams more muscular, and he carries his tail high, whether at rest or in the chase. The hound and harrier are supposed to be natives of Britain, France, and Germany ; an opinion which is attended with some degree of reason, for when transported to warmer climates they degenerate.

It seems extremely probable that this large, strong, and bony hound was the primeval stock from which all the collateral branches of this race have descended ; and that all deviations from the original stem have been the result of crosses and improvements during many centuries, by those skilled in breeding and rearing dogs of the chase, and varied in size and strength, according to the particular sport for which they were intended. At the present day, it is well known that the practical breeder, by judicious crosses, can either enlarge or diminish the stature and strength of his pack in the course of three or four generations.

The following fact affords a striking proof of the wonderful spirit of the staghound in supporting a continuance of exertion. Many years since, a very large and powerful stag was turned out at Whinfield Park, in the county of Westmoreland, and was pursued by the hounds till, by fatigue or accident, the whole pack was thrown out, except two stanch and favourite dogs, which continued the chase the greatest part of the day. The stag returned to the park from whence he set out, and, as his last effort, leapt the wall, and immediately expired. One of the hounds pursued him to the wall, but being unable to get over, lay down and almost instantly died ; the other was found dead at a little distance.

The length of the chase is uncertain; but, as they were seen at Red-kirk, near Annan, in Dumfriesshire, (distant by the post-road forty-six miles,) it is conjectured that the circuitous and uneven course they might be supposed to take would not be less than *one hundred and twenty* miles. To commemorate this fact, the horns of the stag, which were the largest ever seen in that part of the country, were placed on a tree of enormous size in the Park, (afterwards called "Hart's-horn Tree,") accompanied with this inscription:—

> "Hercules kill'd Hart o' Greece;
> And Hart o' Greece kill'd Hercules!"

The horns have been since removed, and are now at Julian's Bower, in the same county.

THE FOXHOUND.

The muzzle of the foxhound is rather long, and his head small in proportion to his body; his ears long and pendulous, though not so much so as those of the bloodhound or staghound, and a little lower at the shoulders, and more slender in his make. His limbs are very straight, his feet round, and not too large; his chest is very deep, and breast wide; his back broad, his neck thin, with the shoulders lying well back, and his tail thick and bushy, which he carries high while in the chase. The ground-colour of his whole skin is white, variously patched with black and tan in different parts of the body, as well as the head, and generally with one at the root of his tail.

No country in Europe can boast of foxhounds equal in swiftness, strength, and agility to those of Britain, where the utmost attention is paid to their breeding, education, and food. The climate also seems congenial to their nature; for when taken to France or Spain, and other southern countries of Europe, they quickly degenerate, and lose all the admirable qualities for which they are remarkable in this country.

> "In thee alone, fair land of liberty,
> Is bred the perfect hound, in scent and speed
> As yet unrivall'd; while in other climes
> Their virtue fails—a weak, degenerate race."
>
> SOMERVILLE.

The chief excellence of a pack of foxhounds is the head they carry, taken collectively; and on this and the fineness of their noses depend their speed. Mr. Beckford says, "that hounds should go, like the horses of the sun, all abreast." Five and twenty couple are a sufficient force at any time to be taken into the field; they are a match for any fox, supposing them steady and their speed nearly equal; too heavy dogs always do more mischief than service. Hounds that are meant to run well together should never have too many old ones amongst them. Five or six seasons are sufficient to destroy the speed of most dogs.

Fox-hunting at the present day is not carried to that extreme which was the custom twenty years ago, as it then killed many of the finest horses. When George IV. was Prince of Wales, he hunted with a pack of hounds which were silent in the chase.

THE HARRIER.

The harrier is considerably less than the foxhound, and was originally generated in a double cross, between the beagle and the southern hound and the beagle. Sportsmen, however, have different sizes of harriers, adapted for the kind of country in which they hunt, as well as the fancy of the owner of the pack. The colour and markings are similar to those of the foxhound, but frequently the dark colours occupying a greater extent of surface. It is this dog which is now almost universally used in Britain and Ireland for hare-hunting.

The harrier pursues the hare with much eagerness and swiftness, allowing her but little time to breathe or double. The keenest sportsman, and well mounted, frequently find it difficult to keep up with the pack ; and when following a strong hare, becomes rather fatiguing work. The mingled voices of a pack of harriers produce a cheerful and agreeable harmony.

Mr. Beckford justly remarks, that " harriers, to be good, like all other hounds, must be kept to their own game : if they are permitted to run a fox, they are afterwards spoiled, and no reliance can thereafter be placed upon them. Hounds of all kinds cannot be perfect, unless used to one scent and one style of hunting." Somerville says,

> " A different hound for every different chase
> Select with judgment ; nor the timorous hare
> O'ermatch'd destroy, but leave that vile offence
> To the mean, murderous, coursing crew, intent
> On blood and spoil."

THE BEAGLE.

The beagle is the smallest of the dogs of the chase. In form he bears considerable resemblance to the harrier ; but with his limbs proportionally much shorter, and on that account much inferior to that dog in point of speed. His sense of smell, however, is equally acute, and he pursues the hare with indefatigable vigilance and energy. Every winding, and all her mazes are traced by him with a matchless degree of exactness, whilst the soft and melodious tones of the pack afford ecstatic pleasure to the lovers of the chase, and is thus beautifully described by the poet of "The Chase:"—

> "Hark! from yon covert, where those towering oaks
> Above the humble copse aspiring rise,
> What glorious triumphs burst in every gale
> Upon our ravish'd ears! The hunter's shout,
> The clanging horns swell their sweet winding notes,
> The pack wide opening load the trembling air
> With various melody; from tree to tree
> The propagated cry redoubling bounds,
> And winged zephyrs waft the floating joy
> Through all the regions near........
> The puzzling pack unravel, mile by mile,
> Maze within maze."

Colonel Smith is of opinion that the beagle is the same as the brachet of the middle ages; and thinks it the only species of long-eared dog known in the West during the Roman empire, and noticed by Oppian under the name of Agassus.

THE TERRIER.

It is now impossible to trace from what stock the terrier has emanated; but possessing as he does so many peculiar characteristics, one would be tempted to consider him a primitive race. There are several distinct varieties of terriers, but all of them possessing the same inherent properties and propensities. For many ages distinct breeds of this kind have been maintained in purity, by the assiduity of careful breeders.

Although the pure terrier is a dog of small stature, he is possessed of wonderful strength and courage. The rough-haired, or Scotch-terrier of the pure breed, seldom exceeds twelve or fourteen inches in height. His body is strong and muscular, his legs short and stout, his ears small and half-pricked; his head rather large in proportion to his body and the muzzle considerably pointed; and possessing a most exquisite sense of smell, which enables him to trace the footsteps of other animals with unerring certainty. His colour for the most part sandy, and in some black. If white or pied, it is a sure mark of impurity of the breed. The hair is rather long, matted, and hard, over almost every part of his body.

There are three distinct varieties of the Scotch terrier: viz., the ordinary kind above described; that of the Isle of Sky, with long, somewhat flowing hair, the body long, and the legs short, and bent inwards at the knees. This kind is somewhat larger than the common breed. The third is a larger dog, standing from fifteen to eighteen inches in height, and with the hair very strong and stiff, and hence termed wire-haired.

The name terrier seems to be derived from the Latin word *terra*, "the earth," from the avidity with which he takes the earth in pursuit of all those animals which burrow.

The terrier, amongst the higher orders of sportsmen, is preserved in his greatest purity, and with the most assiduous attention; and it seems of the utmost importance not to increase its size, which would render him unsuitable for the purposes in which he is employed, namely, that of entering to drive out other animals from their burrows, for which his make and strength, and invincible ardour, peculiarly fit him. On this account he is the univeral attendant upon a pack of foxhounds; and though *last* in the pursuit, he is not the *least* in value. It is when the fox is supposed to have earthed that the services of the terrier are more essentially required: he enters with the utmost eagerness, and soon informs the ear of the sportsman whether or not the fox is in, and at what distance from the mouth, when he is speedily dug out.

THE OTTER-HOUND.

This animal is a mixed breed between the hardy southern hound, and the larger rough, wire-haired terrier. His head is large and broad, and his ears long and pendulous; his size being about that of a harrier; his shoulders and quarters are thick; his hair strong and wiry, and somewhat shaggy. His colour is, for the most part, of a sandy hue, although we have met with good dogs which were white and with large patches of black. He is a bold and fierce dog, with a full and harmonious voice: he carries his tail similar to the fox-hound.

Otter-hunting is now not a very common sport in Great Britain, as the animal is now very scarce, from the population becoming more dense, and cultivation more widely extended; and besides, gamekeepers use all kinds of traps to catch and destroy them.

THE GREYHOUND.

The greyhound is supposed to have had its origin from the Irish greyhound, but to have acquired its thinner and more delicate and elegant form by the influence of climate and culture, and brought to his present state of high perfection by the persevering attention of zealous breeders. The strong similitude of these dogs in shape and general character holds out good grounds for the adoption of such an idea; the smallness of the muzzle, length of neck, and depth of chest, and the light and graceful airiness of his whole figure, and especially the length and elegance of his legs, all contribute to render this the most elegant of the canine tribe.

We owe much of the superiority of the present breed of greyhounds to the perseverance and judgment of the late

Earl of Orford, of Houghton, in Norfolk; and it is said he obtained the great depth of chest and strength of his breed from crossing with the bull-dog. At his death, his greyhounds were sold by auction, and some of the best were purchased by Colonel Thornton; from one of them, Claret, which was put to a favourite bitch of Major Topham's, was produced Snowball, the best greyhound that ever appeared; although he was nearly equalled by his brothers, Major and Sylvia, who were all of the same litter. They were never beaten; and may be considered as examples of the most perfect greyhound.

The shape, make, elegant structure, and other characteristics of high blood, were equally distinguished in all the three; the colour of Snowball was a jet black, and, when in good running condition, was as fine in the skin as black satin. Major and Sylvia were singularly, but beautifully brindled. Snowball won ten large pieces of silver plate, and upwards of forty matches, his master having accepted every challenge, whatever might be the dogs of different counties which might be brought against him. His descendants have generally been also very successful.

The last match run by this celebrated dog, was against the famous greyhound, Speed, the property of Hall Plumber, Esq., of Bilton Park, Yorkshire. He gained the match; and so severe was the run, that Speed died soon after it. This terminated the career of Snowball's public coursing, as the owner, in consideration of his age, then declared he should never run another match.

Snowball was perhaps the fleetest of his race that ever ran; and like the Flying Childers, which was the swiftest of horses, may never be outstripped in rapidity of movements.

Wynken de Worde, who wrote a work on sports in 1496, describes what then constituted the most perfect form of the greyhound in his day, which holds good still :—

Headed lyke a snake,
Necked lyke a drake,
Footed lyke a catte,
Taylled lyke a ratte,
Syded lyke a teme,
And chyned lyke a beame."

The greyhound is the fleetest of all dogs, and is the only one who can cope with the hare in speed. The keenness with which he pursues his game is thus beautifully described by Somerville :—

" With emulation fired,
They strain to leave the field, top the barred gate,
O'er the deep ditch exulting bound, and brush
The thorny-twining hedge: the ridges bend
O'er their arched necks : with steady bounds by turns
Indulge their speed, or moderate their pace."

The greyhound never gives tongue, like other dogs of the chase, when in pursuit of his game.

Greyhounds have been held in much estimation for many centuries in Great Britain. In the time of King John they were accepted by him as payment in lieu of money for the renewal of grants, fines, and forfeitures due to the crown. There is one fine upon record, paid to that monarch in 1203, which specifies "five hundred merks, ten horses, and ten leashes of greyhounds ;" and we find another mentioned in 1210, of "one swift horse, and six greyhounds."

The following curious circumstance is related by Froissart, of King Richard the Second, when confined in the castle of Flint ; which we shall give in the author's words.

" And it was informed me, Kynge Richarde had a grey hounde called Mathe, who always waited upon the kynge, and would know no one else. For whensoever the kynge did ride, he that kept the greyhounde did let him lose, and he wolde streyght runne to the kynge, and fawne upon him, and leap with his fore-fete upon the kynge's shoulders. And as the kynge and the Erle of Derby talked togyder in the courte, the greyhounde, who was wont to leap upon the kynge, left the kynge, and came to the Erle of Derby, Duke Lancaster, and made to hym the same friendly countinuance and chere as he was wont to do to the kynge. The duke, who knew not the greyhounde, demanded of the kynge what they greyhounde would do? 'Cosyn,' quod the kynge, 'it is a great good token to you, and an evil sygne to me.' 'Sir, how know ye that?' quod the duke. 'I know it well,' quod the kynge; 'the greyhounde maketh you chere this daye as King of England, as ye shall be, and I shall be deposed; the greyhounde hath this knowledge naturally, therefore, take him to you: he will follow you, and forsake me.' The duke understood well those words, and cheryshed the greyhounde, who would never after followe Kynge Richarde, but followed the Duke of Lancaster."

We have no information why the name "greyhound" was given to this dog. It is, in all probability, a corruption of "gazehound;" as a variety, or probably the same kind, was known in ancient times by this name, which name it no doubt acquired from hunting by the eye instead of the scent.

THE SCOTTISH HIGHLAND GREYHOUND, OR WOLFDOG.

The Scottish Highland greyhound differs from the common greyhound in one essential particular, as he will either hunt in packs or singly. In size this dog is equal to the Irish greyhound, and very powerful, with great depth of chest, small loins, and his back slightly arched, and long legs. His general aspect is commanding and fierce; his head is long, and muzzle rather sharp; his ears pendulous, but not long; his eyes large, keen, and penetrating, half concealed among the long, stiff, bristly hair, with which his face is covered. His hair is shaggy and wiry, and his general colour reddish sand-colour, mixed with white; his tail is rough, which he carries somewhat in the manner of a stag-hound, but not quite so erect.

It was this noble dog which the Highland chieftains of Scotland used in former times in their grand hunting parties. The breed is now exceedingly rare, and in all likelihood will become extinct. One of the largest and finest which we have ever seen was possessed by the late Sir Walter Scott, Bart., and was an appropriate guardian for his unique seat of Abbotsford. He was the gift of the late spirited and high-minded chieftain Macdonnel, of Glengarry.

This fine specimen of the dog probably brought on himself premature old age by the excessive fatigue and exercise to which his natural ardour and love of sport inclined him; for he had the greatest pleasure in accompanying the common greyhounds; and although, from his great size and strength, he was not adapted for coursing, yet he not unfrequently turned and even ran down hares.

The name of this dog was Maida; and he lies buried at the gate of Abbotsford, which he long protected, as he had more the habits of a watchdog than those of the common greyhound. A gravestone is placed over him, with the figure of a dog cut on it, by Mr. John Smith, of Melrose, and is thus inscribed :—

" Maida, tu marmorea dormis sub imagine, Maidæ
Ad januam domini. Sit tibi terra levis ! "

The Scottish Highland greyhound is endowed with an exquisite sense of smell. One of Glengarry's dogs, named Bran, when held on the leash, followed the track of a wounded stag, and that, too, in most unfavourable, rainy weather, for three successive days, at the end of which time the stag was shot. The present Glengarry wrote me an account of it, in which he mentions, "he," the stag, "was wounded just within nine miles of Invergarry-house, and was traced that night to the estate of Glenmoriston. At dusk in the evening the deer-stalkers placed a stone on each side of the last fresh print of his hoof, and another over it; and this they did each night following. On the succeeding morning they removed the upper stone, when the dog recovered the scent, and the stag was that day traced over a great part of Glenmoriston's grounds. On the third day he was re-traced to the lands of Glengarry, and there shot."

Glengarry also furnished me with the following gallant achievement of one of his dogs. He says, "My present dog, Comhstri, to great courage unites the quality of a gentle disposition, with much fidelity and attachment. Though not so large as some of his kindred, he is nevertheless as high-spirited and determined as any of his race, which the following circumstance will testify:—

"About three years ago, a deer from the wood of Derry-garbh, whose previous wounds had been healed, came out of Glengarry's pass, who wounded it in the body with a rifle bullet. The deerhounds were immediately laid on the blood-track. The stag was started in the course of a few minutes; the dogs were instantly slipped, and the fine animal ran to bay in a deep pool of water, below a cascade, on the Garyquulach stream. Comhstri immediately plunged in, and seized the stag by the throat, both went under water, surrounded with the white foam, slightly tinged with the deer's blood. The dog soon came to the surface to recover his breath, and before the stag could do so, Comhstri dived, and again seized him by the throat. The stag was soon after taken out of the pool dead."

We think it very probable that the Irish greyhound is only a variety of the same stock as the Highland greyhound. The former has much smoother hair than the Scottish breed.

SECTION II.—DOGS USED IN SHOOTING.

THE ENGLISH POINTER.

The Spanish pointer is the stock from which our English pointer was derived. He is much lighter in form, and much more rapid in his movements. He was originally produced by a cross of the Spanish pointer and the fox-hound, and afterwards re-crossed with the harrier. He is now to be met with of a variety of sizes; but it has been found that when pointers are too large, they are far less active than those which are smaller; but in this particular there is a variety of tastes.

The pointer is possessed of a beautiful symmetry of frame; and in this respect is perhaps the most proportionably formed of all the canine race. His docility and pliability of temper are truly astonishing. He enjoys the sense of smelling in an exquisite degree.

In proportion as the breed of pointers diverge in blood from their Spanish progenitor, the difficulty of training them is experienced, and also that steadiness of the original, which renders them stanch for the field.

Pointers are never considered complete in training unless they are perfectly stanch to bird, dog, and gun; which implies, *first*, standing singly to a bird or covey; *secondly*, to backing or pointing the moment he perceives another dog to stand at game; and *thirdly*, not to stir from his own point at the rising of any bird, or the firing of any gun in the field, provided the game is neither sprung nor started at which he himself originally pointed. Whenever a pointer is conscious of his own powers and education, he makes it his whole business to serve and amuse his master. At the same time he will also perform his work to others to whom he may be lent, and is sensible of the duty required of him the moment he enters the field.

Pointers are seldom used for any other kind of shooting than that of grouse, partridge, and snipe.

We are informed of Mr. Daniel, that he possessed a pointer which would always go round close to the hedges of a field before he would quarter his ground; the dog being sensible that he most frequently found his game in the course of this circuit, and therefore very naturally took the middle road to discover it.

The following interesting fact was communicated to me by an eye-witness. The circumstance happened in Forfarshire, and is a strong proof of the reasoning powers of a dog. "Two or three weeks ago, an acquaintance and I were out shooting in this neighbourhood, when we saw the most beautiful thing we ever witnessed in the way of a *point:* one of our pointers, a bitch, was going over a stone dyke, about four feet high, and just as she made the leap, got the scent of some birds on the other side of the wall. She hung by her fore-legs until we came up. It appeared at the distance we were from her, as if her fore-legs had got fastened amongst the stones in the wall, and that she could not extricate herself. You may judge of our delight when coming up, to find that it was her caution, for fear of flushing the birds, that prevented her from taking the leap. It is impossible adequately to convey to you in writing the beauty of this *point!*"

Was this mere instinct, or was it reason.

Sir Charles Stewart Menteath, Bart., of Closeburn, Dumfriesshire, had an extremely small and beautifully formed pointer. His length, from the point of the nose to the tip of the tail, was only two feet and half an inch. From one fore-foot to the other, across the shoulders, two feet; length of the head, six inches; girth of the chest, one foot three inches. He was a most perfect miniature of the best formed English pointer. His colour was white, with dark liver-coloured patches on each side of the head, extending half-way down the neck; the ears, with some patches down the back, were also of the same colour; and numerous dark liver-coloured spots sprinkled his entire body. His olfactory sense exhibited itself in a high degree.

The late Earl of Lauderdale had some of the same dogs, which were broke in and pointed most admirably. Sir James Colquhoun, Bart., of Luss, had one of the same kind, which was considerably smaller than Sir C. Menteath's.

THE ENGLISH SETTER.

This celebrated breed was produced between the Spanish pointer, the English water-spaniel, and springer, which, by careful and assiduous cultivation, has attained a very high degree of perfection as a sporting dog. His figure is elegant, and his fur presents a very pleasing diversity of colour, with beautifully flowing hair, extremely villous on the lower margin of the tail, and in the middle of the belly.

The setter possesses all the high qualities of the pointer, with a greater degree of speed and natural vivacity of temper; he, however, is not so easily broken-in as the pointer, and requires a certain degree of training every season to make him continue stanch. There have been, however, various instances of setters being self-taught.

The setter ranges with great speed, and is a very hardy dog. Many prefer him to the pointer; and if water is plentiful he is certainly more useful; for his feet are much better defended against the sharp cutting of the heath, than those of the pointer; as a great deal of hair grows between the toes, and round the ball of the foot, of which the pointer is almost destitute. Besides, he ranges much faster, and can endure much more fatigue. He can serve in thick coverts, where a pointer will not enter, and on this account is useful in woodcock-shooting, where springers or cockers are not kept.

Formerly the setter was used for the purpose of taking partridges with the draw-net; and was generally taught to squat down when the game was within a proper distance,—hence the name setter.

The setter, besides his uses in the field, is much employed in duck-shooting, as he is an excellent swimmer, and takes the water very readily. He is naturally of a timid disposition, and much afraid of correction, which, if inflicted with too much severity, never fails to render him ever afterwards unfit for field-sports. He becomes what is termed blinked, and in this case is so overpowered with fear, when threatened with correction, that he will sink at his master's feet, and will steal away, after which it will be impossible to rouse him to further exertion in finding game; consequently it is of much consequence that both breaker and master should cautiously ascertain the dog's natural character.

The following beautiful stanzas of Somerville finely depicts the style of ranging by the setter:—

> " When Autumn smiles, all beauteous in decay,
> And paints each chequer'd grove with various hues,
> My setter ranges in the new-shorn fields,
> His nose in air erect; from ridge to ridge
> Panting he bounds, his quarter'd ground divides

In equal intervals, nor careless leaves
One inch untried. At length the tainted gales
His nostrils wide inhale; quick joy elates
His beating heart, which, awed by discipline
Severe, he dares not own, but cautious creeps," &c.

THE SPRINGER.

The springer is supposed to have had its origin in Great Britain, although it is now to be met with in almost all countries. He is much used, and eagerly sought after in the wild sports of the East.

In form, the true English-bred springer differs but little from the setter, except in size, the former being about two-fifths less in height and strength, with a more delicate form, the ears longer in proportion, very soft and pliable, covered with long, silky, waving hair; the head is larger in proportion to the bulk of his body, and the nose red or black, the latter, however, being the surest mark of high-breeding; the tail is bushy and pendulous, and is always in motion when the dog is employed in pursuit of game.

Differently from other dogs used in shooting, both the springer and cocker give tongue the moment they either see or smell game, and this is an indication to the sportsmen, who generally station themselves on the skirts of the wood or covert, to which pheasants, woodcocks, and snipes are known to fly, when started.

It will thus be seen how admirably adapted the different varieties of dogs are for the particular kind of sport in which they are to be employed. The dogs of the chase give tongue whenever their game is started, and continue their cry until the object of their pursuit is run down, while their mingled and varied voices produce the most delightful, exhilarating, and harmonious sounds, so beautifully apostrophized by the poet of the Chase, as already quoted at page 694. The greyhound alone pursues his game in silence, which could not be otherwise, as every nerve is strained, to outstrip his prey. And here we find in the springer and cocker, which are required for driving game, that shelter in thick coverts and brushwood, from their retreats, where a sportsman cannot penetrate, barking, whenever they find either of those for which they are trained, and thus affording a premonitory warning, to look out.

From the time the springer is thrown off in the field, he gives evident proofs of the pleasure he experiences in being thus employed, by the perpetual motion of his tail, which is termed feathering, amongst sportsmen ; and upon the increasing vibration of which, the experienced fowler well knows he is getting nearer to the object of his attraction. The more closely he approaches the game, the more energetic the dog becomes in his endeavour to succeed ; tremulous whispers escape him as a symptom of doubt ; but the moment this doubt is dispelled, and the game is found, his clamorous raptures break forth in full force. He expresses his gratification by loud and quick barking, which may be relied on as a proof that he has not sought in vain, leaving the happy owner exultingly to boast, that " he is in possession of at least one faithful domestic who never tells a lie."

The following anecdote, related by Mr. Blain, is one proof among many, showing that dogs are endowed with some wonderful instinctive knowledge, by which they can traverse with unerring certainty a country with which they are unacquainted, in pursuit of their master or former home. He says,—" I took a spaniel, bred in London, forty-eight miles, in the close rumble-tumble of a chaise into Essex, where she remained with me some months. During the journey she was only once taken out of this close confinement for a few minutes in an inn yard. She proved useless as a sporting dog, and I gave her to a friend to breed from, who was on a visit with me. I accompanied him on his return from Essex, and she was brought back with us exactly in a similar manner to that in which she had been before taken; and it is most certain, that neither in going nor coming did she ever see twenty yards of the road. On our arrival in London she was removed to my friend's kennel, from whence she contrived to escape during the night, by digging her way out in a most extraordinary manner, and travelled the whole forty-eight miles back into Essex so expeditiously, that a servant found her at the door of my residence in the country, in the morning when she arose. The bitch remained at large during the day; but finding I was not in the country, she again set off in the evening, and returned to London; and in the morning once more presented herself at my friend's house in search of me."

THE COCKER.

This dog is considerably smaller than the springer, and is generally used for woodcock and snipe shooting. His diminutive size peculiarly fits him for ranging in low, thick coverts, for which purpose nature seems particularly to have adapted him.

The form of the cocker is shorter and more compact than that of the springer, his head is rounder and his muzzle shorter; his ears are very long, and the limbs short and strong. The entire ears, neck, and body are covered with longer and more curled hair than the springer. He varies also from liver and white, red, red and white, or entirely liver-coloured, with tanned legs and muzzle.

This beautiful and lively dog seems to have been produced originally by a cross between the small water-spaniel and the springer; as he not only resembles the figure of the latter, but also possesses many of his habits, combined with the lively and active disposition of them both. From the beauty and temper of the cocker, he has been very generally diffused throughout the kingdom, and on these accounts he is more frequently a companion of the parlour than used for the sports of the field.

It is the unalterable nature of the cocker to spring, flush, or start all the game before them, and they pursue without distinction, hare, pheasant, partridge, woodcock, snipe, quail, and plover. It consequently becomes necessary to hunt them within gun-shot of covert, and they never should be allowed, if possible, to go beyond call of the sportsman, or his whistle; the following beautiful passage, from Somerville, depicts the cocker in field-sports :—

> "But if the shady woods my cares employ,
> In quest of feathered game my spaniels beat,
> Puzzling th' entangled copse; and from the brake
> Push forth the whirling pheasant; higher in air
> He weaves his varied plumes, stretching away
> With hasty wing. Soon from the uplifted tube
> The mimic thunder bursts, the leaden death
> O'ertakes him, and, with many a giddy whirl,
> To earth he falls, and at my feet expires."

THE SMALLER SPANIEL, OR KING CHARLES'S COCKER.

This beautiful little dog is considerably less than the cocker, to which he is closely allied in character and form; he has, however, much longer ears, and the tail is also longer in proportion to the size of his body. Like the springer and cocker, he is extremely fond of pursuing birds of all kinds, and like them, also, he gives tongue in the pursuit. His diminutive size unfits him for field-sports. He is easily tired, and his legs too short to get through swampy ground.

King Charles the First was much attached to these dogs, and was always followed by from eight to a dozen of them. In all the portraits of that monarch or his family they were introduced; and in particular we may allude to the celebrated portrait by Vandyke.

The Dukes of Marlborough have preserved in the utmost purity this race of dogs; and the late General Maxwell, of Parkhill, Stirlingshire, had a beautiful breed of them. They were black, with the insides of their ears and legs tan-coloured: their ears were extremely long.

THE LARGE WATER-SPANIEL.

This dog is somewhat near the size of an ordinary setter but considerably stronger in the bone, and shorter in the legs. His head is long, and his muzzle moderately acute, his face quite smooth as well as his legs in front; his ears are long, which, together with his whole body, is covered with long, curled, crisped hair. His ordinary hue is dark liver-colour, with white legs, neck, and belly; and sometimes, although rarely met with, entirely black.

His sense of smell is very acute, and he swims and dives with very great dexterity; on which account he is very valuable as a retriever, in wild-fowl shooting: he watches with minute observation the actions of his master, and whenever a bird is killed, he plunges instantly into the water and fetches it out, and lays it at the foot of his owner.

This dog is very acute at finding the haunts of wild-fowl, and is easily taught to fetch and carry articles, and also to seek articles which have been lost; which latter quality obtained for him in former times the appellation of "the finder."

The native country of this dog is Spain; but we conceive that the variety we possess, which is a very distinct one, is not the pure breed as originally imported into this country, but that it is the produce of the large water-dog and the English setter, as it appears to be intermediate between these, not only in figure, but also in their united qualities.

THE SMALL WATER-SPANIEL, OR POODLE.

The small water-spaniel is supposed to be the offspring of the large water-dog and the cocker: he has all the appearance of the former in shape, and also in the thickly-curled silky hairs. No dog whatever possesses more activity and buoyancy of spirit than this; and he is highly susceptible of instruction of almost any kind. He is a most dexterous diver; and so exquisite is his olfactory sense that he will find at the bottom of a river or pool a stone which is thrown in by his master, even where there are many other stones. The poodle has been taught to perform many domestic offices, and those, too, with the utmost accuracy, such as to go errands, shut a door, ring a bell, fetch his master or mistress's shoes or gloves, &c. The general colour of this dog is white. He is very useful as a retriever, and will fetch anything out of the water.

SECTION III.—WATCH-DOGS.

THE MASTIFF.

The mastiff is a large and powerful dog, with a large flat head, and rather long and pendulous ears; his forehead large and broad; his muzzle wide and obtuse, his lips are full, loose, the upper one hanging considerably over the lower, at the two extremities of the mouth; his aspect is grave, and somewhat sullen; and his bark loud and deep-toned; his chest is very wide and deep; his limbs strong, and the whole muscles of his frame full, and largely developed.

There can be but little doubt but that the mastiff is a truly British dog, and had his origin in this country. We are borne out in this opinion by finding that, at so early a period as the time of the Roman empire, this country was celebrated on account of its dogs of this kind; and at the period when Great Britain was under the Roman yoke, an officer was appointed to live here, whose sole business was to breed, select, and send to Rome such as promised, by their size and strength, to become fit for the combats of the amphitheatre. Dr. Caius informs us that three mastiffs were reckoned a match for a bear, and four for a lion.

From the large size and commanding aspect of the mastiff, he is naturally calculated to intimidate strangers; consequently is peculiarly well suited for the protection of large and extensive premises; and he watches them with the most scrupulous care and assiduity. He is so instinctively impressed with the importance of his charge, that he will lose his life rather than abandon it. But with this commanding aspect, he possesses qualities of the best kind. He is remarkable for the great mildness of his disposition, when disencumbered of his charges, and is as solicitous to gain attention, and as faithfully grateful for favours, as the most diminutive of the canine race.

The mastiff has one peculiarity in his character, which seems inherent:—his ferocity is always increased by the degree of restraint under which he is kept. If kept constantly on the chain, his temper is irritable and ferocious, and it is consequently dangerous for a stranger to approach him; from whence it evidently appears, that what may be considered a friendly kindness on one side, is always productive of confidence on the other. He seems conscious of his own great strength, power, and authority, and will seldom condescend to lower his dignity by servile fawning, while he appears to consider his services as only befitting a trust of the highest importance. This dog is naturally possessed of strong instinctive sensibility, speedily obtains a knowledge of all the duties required of him, and discharges them too with the most punctual assiduity. In the protection of houses, woodyards, gardens, and widely-extended manufactories his vigilance is very striking : he makes regular rounds of the whole premises like a watchman, examines every part of them with a careful eye : his penetration reaches even the remotest corner, and not a spot is passed by until he is satisfied that all is in a state of perfect security. During the night he gives a signal of his presence by repeated and vociferous barkings, which are increased upon the least cause of alarm; and, contrary to the spirit of the bull-dog, whose invariable practice is to bite before he barks, the mastiff always warns before he attacks.

This breed is now exceedingly difficult to be obtained in purity, from the various admixtures and experimental crosses which have lately taken place. The genuine English mastiff is now rarely to be seen, although we have dogs of various sizes and colours which go under that name. At Lyme Hall, in Cheshire, there is a pretty pure breed of these dogs. The true mastiff has very rarely been known to attack the human being, except under the most palpable provocation.

The mastiff usually shows a remarkable and peculiar warmth in his attachments, and, on the other hand, he is equally distinguished for inveteracy in his dislike. If he is once severely corrected or insulted, it is almost impossible to eradicate the feeling from his memory, and it is no less difficult to obtain a reconciliation with him. He seems conscious of his own strength, power, and authority, and will seldom condescend to lower his dignity by servile fawning ; nor will he easily be induced to combat an inferior enemy, as will be illustrated by the following anecdote :—

A farmer in the neighbourhood of Falkirk had a large mastiff dog, which used to go regularly to church, and was always attended by a very small mongrel. In their way to and from church, in passing through the principal street, where there were always a number of butchers' dogs, who used to be very clamorous, although they never ventured actually to attack the church-going couple, probably having had proof of the mastiff's powers. One Sunday, however, the diminutive cur was induced to give battle to one of those dogs, which, the mastiff discovering, turned back, and the butcher's dog scampered off. The mastiff did not condescend to give chase, but taking up his little friend with his mouth by the neck, carried him to the extreme end of the town and set him down, after which they quietly walked home together.

THE BULL-DOG.

There can be little doubt respecting the original country of this dog, as all authors are agreed in opinion that it is of British origin. Some writers affirm that it was the bull-dog and not the mastiff which was held in such high estimation when the Romans invaded Britain. But if it was the bull-dog it must have been a very different animal in point of size from what it is at the present day, for the best breed is now low in stature, very deep-chested, and strongly made about the shoulders and thighs; the muscles of both of which are extremely developed. His head is broad, his nose short and flat, with the under jaw projecting beyond the upper one, producing a fierce and disagreeable aspect. His eyes are distant, and prominent, appearing as if forced out of their sockets, and giving him a suspicious-like leer, which, with the distention of his nostrils, produce a contemptuous look; and in conjunction with these, the teeth being always exposed, he has the constant appearance of grinning, while he is perfectly placid. He is the most ferocious and unrelenting of the canine tribe, and is, doubtless, courageous beyond every other animal in the world; for no animal, however great in magnitude, will be exempt from his attack. He is hardly capable of any education, and seems fitted only for combat and ferocity. He gives no warning by barking when he attacks, and holds with such determined pertinacity the part that he seizes upon, that it is with the utmost difficulty he can be disengaged. He generally lays hold of the lip, tongue, or side of the cheek or eye, which he maintains in spite of the most desperate efforts of the animal to free himself from his antagonist; and no command of his master will induce him to desist, which can only be effected by squeezing the windpipe till he is nearly choked; and instances have occurred where he has been mutilated and still maintained his gripe. The thorough-bred bull-dog always attacks animals in front, seizing either on the head or throat, and when they lay hold of any of the extremities, it is reckoned a degeneracy from the original purity of blood.

This animal derived its name from his having been employed in former times in assaulting the bull; and he is used for the same brutal purpose at the present day, where such amusements are still practised; but these are, like cock-fighting, happily on the decline.

The first bull-baiting, of which we have a well-authenticated account, took place in the reign of King John, in 1209, at Stamford, in Lincolnshire, and had its origin in the following circumstance:—William, Earl Warren, Lord Stamford, standing upon the walls of his castle, saw two bulls fighting for a cow in the castle-meadow, till all the butchers' dogs pursued one of the bulls (which was maddened by the noise and multitude) through the town. This sight so pleased the earl, that he gave the castle-meadow, where the bulls' combat began, for a common to the butchers of the town, after the first grass was mowed, on condition that they should find "a mad bull" on a day six weeks before Christmas, for the continuance of that sport for ever. At Tutbury, in Staffordshire, about the year 1374, an establishment of a similar nature was instituted, which was abolished by the praiseworthy and humane exertions of the Duke of Devonshire, in 1778, as steward of Tutbury.

There is a singular will, bearing date May 18th, 1661, by which a person named George Staverton, gave the whole rent of his dwelling-house, situated at Staines, in Middlesex, (after two lives) to buy a bull annually for ever, which bull he gave to the poor of Workingham, in Berkshire, to be there baited, then killed and equitably divided; the offal, hide, and gift-money (collected from the spectators) to be laid out in shoes and stockings, to be distributed among the children of the poor. These seem to be the principal donations mentioned in history upon which the practice of bull-baiting was unhappily founded originally, and has been since continued in this country under the plausible pretext of charity. To give it a still greater degree of singularity in the town of Workingham, St. Thomas's day is annually dedicated to this sublime sport!

Many strenuous efforts have been made for the abolition of this barbarous and inhuman amusement; among these, the Rev. Dr. Barry preached a sermon in the church of Workingham, at the request of the Rev. Mr. Bremner, then resident clergyman of the parish, on Sunday, the 20th December, 1801, being the day previous to the festival of St. Thomas, which was afterwards published, and from which we extract the following excellent admonition:—

"Gracious God! benevolent Parent of the universe! what prodigy must he be in a Christian land, who could thus disgrace his nature by such gigantic infamy, at which the blood of a heathen, of a very Hottentot, might curdle! Two useful animals, the bull, which propagates our food, and the faithful dog, which protects our property, to be thus tormented! and for what purpose? Does it tend, as some have said,* to keep alive the spirit of the English character? In answer to this we must remark, that the barbarous sport (if sport it can be called) was totally unknown to the ancient bravery of our ancestors; was introduced into this country during the reign of a bad king; and earnestly do I pray to Almighty God that in the reign of a most pious and benevolent prince it may be for ever set aside. Cowards, of all men the least unmoved, can both inflict and witness cruelties. The heroes of a bull-bait, the patrons of mercenary pugilists, and the champions of a cock-fight, can produce, I should think, but few, if any, disciples brought up under their tuition, who have done service to their country, either as warriors or citizens; but abundant are the testimonies which have been registered at the gallows, of her devoted victims, trained up by these pursuits of bull-baiting!"

THE BULL-TERRIER.

The bull-terrier has now become a fixed variety of the dog: it was originally propagated by a cross between the bull-dog and terrier, and in point of form is handsomer than either of its progenitors. He is a sprightly and showy animal, and even better adapted for mischievous sport than either of those dogs from which he has sprung. He is airy and pleasant tempered, but possesses great fierceness when his energies are called into action. His head is rather square and large, his neck short and thick, his chest deep, and legs very strong, and cleanly formed, his hair is stiff and hard. This dog has great strength of jaw, and he has risen into great reputation with gentlemen of the "fancy!" but it is to be lamented that the services of this excellent dog are too often misapplied, and his prowess turned to the most wanton mischief, such as fighting with other dogs, tearing to pieces the domestic cat, worrying and maiming unfortunate and starving stray dogs—sports which cannot fail to be viewed by the humane with horror, and cannot be too severely reprobated.

---

* Mr. Windham, in the House of Commons.

Some time ago, no fashionable young man could appear without a bull-terrier at his heels, which Mr. Egan, a popular and amusing author of the day, depicted in the following graphic caricature :—" The new breed," says he, " which has become so truly the *go* that no *rum* or queer *kiddy*, or man of cash, from Tothil-street in the west, to north-eastern Holloway, far less any swell *rising* sixteen, with a black, purple, or green Indiaman round his squeeze, the corner of his variegated *dab* hanging from his pocket, and his pantaloons well *creased* and *puckered*, but must have a tike of the new cut at the heels of himself or his prad. The swells of Brunswick, and the adjoining squares, have dropped even the Newfoundland and the poodle, to be followed by one of a new edition of the dog."

The late Sir Walter Scott had a very intelligent dog of this breed, and kindly furnished me with the following account of him :—" The wisest dog I ever had was what is called the bull-terrier. I taught him to understand a great many words, insomuch that I am positive that the communication betwixt the canine species and ourselves might be greatly enlarged. Camp once bit the baker, who was bringing bread to the family. I beat him, and explained the enormity of his offence; after which, to the last moment of his life, he never heard the least allusion to the story, in whatever voice or tone it was mentioned, without getting up and retiring into the darkest corner of the room, with a great appearance of distress. Then if you said, 'The baker was well paid;' or 'The baker was not hurt after all,' Camp came forth from his hiding-place, capered and barked, and rejoiced. When he was unable, towards the end of his life, to attend me when on horseback, he used to watch my return, and the servant used to tell him 'his master was coming down the hill, or through the moor,' and although he did not use any gesture to explain his meaning, Camp was never known to mistake him, but either went out at the front to go up the hill, or at the back to get down to the moor-side. He certainly had a singular knowledge of spoken language."

THE NEWFOUNDLAND-DOG.

The powerful and beautiful dog known by this name, now plentifully distributed throughout Great Britain, is not the pure breed, but a race procured by a mixture with others. The pure Newfoundland-dog, however, differs from the Esquimaux and other wild races, in his muzzle being much broader, his lips more hanging, his ears partially pendulous, his back longer, and more loose in his general structure.

The Newfoundland-dog, as now improved in this country is unquestionably one of the noblest of the canine race, both in regard to his majestic appearance, large size and strength, and surprising intelligence. The full-sized animal measures from the nose to the end of the tail about six and a half feet; from the one fore-foot to the other, over the shoulders, five feet eight inches; girth behind the shoulders three feet four inches; round the head, across the ears, two feet; round the upper part of the fore-leg ten inches; length of the head fourteen inches; his feet are webbed, or with the membrane connecting the toes extending to their tips, which enables him to swim with great ease and dexterity. He is covered with long, shaggy, flowing hair, and his fore-legs are feathered behind, as well as the hinder ones, as far as the hock joint. The fur in many is white, with black or dark brown patches and spots, but they are also met with plentifully of almost all colours, as chocolate, fawn-colour, cream-colour, and black.

This dog is not remarkable for symmetry of form, or in the setting on of his legs, and consequently his motion is somewhat awkward and loose, and therefore he is not distinguished for speed,—a defect which might be remedied by breeding, were an improvement in that particular desirable.

The Newfoundland-dog is docile to a very great degree, and nothing can exceed his affection. Naturally athletic and active, he is ever eager to be employed, and seems delighted to perform any little office required of him. Nature has given him a great share of emulation, and hence to be surpassed or overcome is to him the occasion of great pain. Active on every emergency, he is the friend of all, and is naturally without the least disposition to quarrel with other animals. He seldom or never offers offence, but will not receive an insult or injury with impunity. Such is the capacity of his understanding, that he can be taught almost everything which man can inculcate, and of which his own strength and frame are capable. His sagacity can only be exceeded by his energies, and he perseveres with unabated ardour in whatever shape he is employed, and while he has a hope of success he will never slacken in his efforts to attain it. The amazing pliability of his temper peculiarly fits him for the use of man, and he never shrinks from any service which may be required of him, but undertakes it with an ardour proportionate to the difficulty of the execution.

Sagacity, and a peculiarly faithful attachment to the human species, are characteristics inseparable from this dog; and hence he is ever on the alert to ward off from his master every impending danger, and to free him from every peril to which he may be exposed. He is endowed with an astonishing degree of courage, whether to resent an insult or to defend his friends, even at the risk of his own life.

As a proof of the intellectual superiority of the Newfoundland-dog, we may mention, that innumerable instances have occurred of their having saved persons from drowning, of their own accord, which the following facts will prove:—

A farmer's servant man, passing a deep water on horseback, with a woman behind him, the latter slipped off, and after a few struggles sunk to the bottom, unperceived by the clown, who rode on. Some spectators at a distance hastened to the water-side, and beheld the efforts of a Newfoundland-dog which attended the careless servant. The friendly animal had perceived the woman fall, and instantly swam to the place and dived after her. At first he brought her cap to the shore, but looking at it he dived again, and brought up her cloak: when he had brought it to the water-side, he looked at it for some moments as if with the anger of disappointment, and rushed back to the place the third time, and, to the wonder of the people present, he brought up the woman, over whom he expressed every demonstration of joy She soon recovered, and was afterwards housekeeper to clergyman in Norfolk.

In the summer of 1792, a gentleman went to Portsmouth for the benefit of sea-bathing. He was conveyed in one of the machines into the water; but being unacquainted with the steepness of the shore, and no swimmer, he found himself, the instant he quitted the vehicle, out of his depth. The state of alarm into which he was thrown increased his danger, and, unnoticed by the person who attended the machine, he would inevitably have been drowned, had not a large Newfoundland-dog, which by accident was standing on the shore and observed his distress, plunged in to his assistance: the animal seized him by the hair, and conducted him safely to the land; but it was some time before he recovered. The gentleman afterwards purchased the dog at a high price, and preserved him as a treasure of equal value with his whole fortune.

As a proof that dogs understand, in many instances, spoken language, we have seen a Newfoundland-dog fetch any particular thing which his master asked him. A large assemblage of various articles were promiscuously piled up in the middle of the floor of an adjoining room, such as shoes, boots, gloves, sticks, umbrellas, horse-whips, spurs, hats, slippers, &c. We were asked what we wished him to bring, and instantly on it being named, the dog went to the next room and fetched it. We first requested a pair of slippers to be brought, when Cæsar brought one, laid it down, and returned for the other. He was next required to fetch a stick; he instantly obeyed, and returned with the one his master invariably used, although there were several others in the heap.

THE SHEPHERD'S DOG.

The shepherd's dog is characterised by his upright ears, sometimes slightly drooping at the tips, sharp muzzle, his long and rather woolly-like hair, with a great villosity on the under part of the tail, as well as on the back of the fore-legs. The body is somewhat elongated, and the legs rather short. There is a character which pervades most of the individuals of this race, namely, that their feet are provided with one, and frequently with two superfluous toes, which are destitute of bony adhesion or muscular action, and hang dangling at the hind part of the leg more like an unnatural excrescence than a necessary appendage to the animal. But as "Nature has made nothing in vain," these must certainly be destined for some useful purpose with which we are yet unacquainted. These dew-claws, as they are termed, are sometimes found in the spaniel, pointer, and cur-dogs; in the two former they are generally cut off at an early age, as they are impediments in covers, and frequently get torn, thereby creating sores, and sometimes rendering the dog lame for days together. The shepherd's dog seldom reaches two feet in height.

This truly useful and intelligent animal is exceeded by no other member of the canine race. He is remarkable for his placid, obedient, serene, and grateful character. He is ever alive to the slightest indication of his master's wishes, prompt and gratified to execute them, and he seems to enjoy the highest delight when employed in any kind of useful service. Formed by nature with an instinctive propensity to industry, he is never more pleased than in exerting his talents for the benefit of man, and in affording constant proofs of his inviolable attachment.

The inherent calmness, patience, and devoted faithfulness of the shepherd's dog render him insensible to all attractions beyond the arduous duties connected with the flock under his care. When once properly trained, he not only becomes perfectly acquainted with the extent of his beat, but also with every individual in the flock; he will most carefully select his own, and drive off such as encroach on his limits. This appears the more extraordinary, when we consider the vast extent of mountain country, (especially in Scotland,)

and the numerous flocks committed to the charge of a single shepherd, a duty which he could not possibly perform but for the invaluable services of this sagacious animal. A word or signal from the shepherd will direct the dog so as to conduct the flock to any point required, and that signal he will obey with energy and unerring certainty.

Some have imagined the shepherd's dog destitute of the social characters for which most dogs are remarkable, and that his nature is sullen and sleepy; these, however, originate in mistaking the true virtues of the animal. Accustomed to the company of his master alone in those dreary and unfrequented wilds, he naturally acquires a thoughtful and expressive gravity; and, like man himself, when unaccustomed to society, he becomes habitually taciturn and shy. This is his character in remote situations; for where he is accustomed to see strangers, he exhibits all the amiable qualities of other dogs. His sagacity, affection, fidelity, comprehensive penetration and activity are exceeded by no other dogs; the frequent excursions he necessarily makes during the day afford him sufficient exercise. This is his character all over Europe.

Of the wonderful susceptibility for training, the following anecdotes will sufficiently illustrate the intelligence of the shepherd's dog.

Few instances of greater sagacity in a dog can be adduced than the following:—The owner himself having been hanged some years before for sheep-stealing, this fact, among others respecting his dog, was fully authenticated by evidence on the trial. When the man intended to steal a sheep, he did not do it himself, but directed his dog to perform the business. With this view, under pretence of looking at the sheep with an intention to purchase them, he went over the grounds with the dog at his feet, to whom he secretly gave a signal, so as to let him know the individuals he wanted, to the number of perhaps from ten to twenty, out of a flock of some hundreds; he then went away, and from a distance of several miles sent back the dog by himself in the night-time, who picked out the individual sheep that had been pointed out to him, separated them from the rest, and drove them before him the distance of ten or twelve miles, till he came up with his master, to whom he delivered his charge.

"My dog Sirrah," says the late celebrated author, Mr. James Hogg, the Ettrick Shepherd, "was, beyond all comparison, the best dog I ever saw: he was of a surly and unsociable temper—disdaining all flattery, he refused to be caressed; but his attention to my commands and interests, will never again, perhaps, be equalled by any of the canine race. When I first saw him, a drover was leading him in a rope; he was both lean and hungry, and far from being a beautiful animal for he was almost all black, and had a grim face, striped with dark brown. The man had bought him of a boy somewhere on the border for three shillings, and had fed him very ill on his journey. I thought I discovered a sullen intelligence in his countenance, notwithstanding his dejected and forlorn appearance: I gave the drover a guinea for him, and I believe there never was a guinea so well laid out, at least I am satisfied that I never laid out one to so good a purpose. He was scarcely a year old, and knew so little of herding, that he had never turned a sheep in his life; but as soon as he discovered that it was his duty to do so, and that it obliged me, I can never forget with what anxiety and eagerness he learned his different evolutions. He would try every way deliberately until he found out what I wanted him to do, and when I once made him understand a direction, he never forgot or mistook it again.

Well as I knew him, he often astonished me; for, when hard pressed in accomplishing the task that he was put to, he had expedients of the moment that bespoke a great share of the reasoning faculty."

Amongst other remarkable exploits of Sirrah's, as illustrative of his sagacity, Mr. Hogg relates, that, upon one occasion, about seven hundred lambs, which were under his care at weaning-time, broke up at midnight, and scampered off in three divisions, across the neighbouring hills, in spite of all that he and an assistant could do to keep them together; "Sirrah," cried the shepherd, in great affliction, "my man, they're a' awa'." The night was so dark that he could not see Sirrah; but the faithful animal heard and knew the import of his master's words,—words such as, of all others, were sure to set him on the alert; and without more ado, he silently set off in quest of the recreant flock. Meanwhile the shepherd and his companion did not fail to do all in their power to recover their lost charge; they spent the whole night in scouring the hills for miles round, but of neither the lambs nor Sirrah could they obtain the slightest trace. It was the most extraordinary circumstance that had ever occurred in the annals of pastoral life. They had nothing for it, day having dawned, but to return to their master, and inform him that they had lost his whole flock of lambs, and knew not what was become of them. "On our way home, however," says Hogg, "we discovered a lot of lambs at the bottom of a deep ravine, called the 'Flesh Cleuch,' and the indefatigable Sirrah standing in front of them, looking round for some relief, but still true to his charge. The sun was then up, and when we first came in view, we concluded it was one of the divisions which Sirrah had been unable to manage, until he came to that commanding situation. But what was our astonishment, when we discovered that not one lamb of the whole flock was wanting! How he had got all the divisions collected in the dark is beyond my comprehension. The charge was left entirely to himself, from midnight until the rising sun; and if all the shepherds in the forest had been there to have assisted him, they could not have effected it with greater propriety All that I can further say is, that I never felt so grateful to any creature under the sun as I did to my honest Sirrah that morning."

THE COACH-DOG, OR DALMATIAN.

This dog, once so common an attendant upon gentlemen's carriages, has now become exceedingly scarce. Some authors have confounded him with the Danish dog. Buffon and others imagine him to be the harrier of Bengal; but his native country is Dalmatia, a mountainous district of European Turkey.

In Britain the Dalmatian has only been used for ornament, while in Italy he was long the harrier of that country, and used for upwards of two centuries as a dog of the chase. He has also been used as a pointer, for which he has been found even more adapted than for hunting; and many instances have occurred where he has turned out very stanch. His form is handsome, as if a medium between the foxhound and pointer, his head, however, is more acute than that of the latter, and his ears fully longer; his general colour is white, and his entire skin covered with small black or reddish-brown spots. The pure breed has tanned cheeks and black ears. In size, he is considerably smaller than the Danish dog. A barbarous opinion prevailed at one time in this country, that the Dalmatian looked better with his ears cropped; and we remember the time when hardly one that we met with but had been denuded of those elegant appendages, but happily this depraved taste has now become nearly extinct.

Lord Maynard lost a dog of this kind in France, which he in vain endeavoured to recover while in that country. He returned to England, where he had not long arrived before the dog appeared at his residence; but the mode of his return has remained for ever unexplained, though it is probable that the dog's sagacity, when he had made his escape from confinement, prompted him to go to the sea-coast, where he must have found means to get on board some vessel bound for the opposite shore.

SECTION VI.

OF FIELD-SPORTS GENERALLY.

INTRODUCTION.

From the remotest ages, mankind have been addicted to the pleasures of the chase; and hunting has been practised by all nations—by some as a means of procuring subsistence, and by others as a sport.

Man has assumed a right from the power given to him by his Creator over every living thing, as appears by the first chapter of Genesis; and in the ninth chapter of that book there are still stronger grounds for confirming this right; for not only was Noah told that the fear of him should be upon every beast, but, moreover, that "every moving thing that liveth, shall be meat for you."

The sacred writings also inform us, that hunting was practised more than four thousand years ago; and that Nimrod, the third in descent from Noah, was a great hunter; and that he was very bold and dexterous in the pursuit of animals of the chase, which the poet Tickell thus alludes to:—

> "Bold Nimrod first the lion's trophies bore,
> The panther bound, and lanced the bristling boar.

He taught to turn the hare, to bay the deer,
And wheel the courser, in his mid career."

It was the occupation of Nimrod to hunt and destroy the wild beasts that infested the neighbourhood of Babylon. Ishmael, the son of Abraham, by Hagar, his female slave, took up his abode in the forests, where he became a skilful hunter, and was the progenitor of the Bedouin Arabs, who, to this day, lead a wild and unsettled life, in tents, amid the deserts and forests, where they live by hunting, and pasturing their flocks, which they drive from one place to another, as necessity requires. We have also an account of many who pursued this occupation, in the Bible, as well as in the mythology of the ancients.

The glory of being the first who cultivated the art of hunting as a science, and the training of dogs to the regular pursuit of game, is attributed to Pollux; and his brother Castor was the first who broke and trained horses to the chase of the stag. The Greeks held that Perseus was the oldest hunter of antiquity; but that honour was justly disputed with him by Castor and Pollux.

The Roman jurisprudence, which was formed on the primeval state of society, made a law of hunting, and established it as a maxim, that as the natural right of all things which have no master belongs to the first possessor, all wild animals are the property of him who first takes them. This law was afterwards reversed by the northern barbarians, who overran the Roman empire. They brought with them a stronger taste for this diversion, and having the means of subsistence otherwise, from the rich and fertile lands they had conquered, their leaders appropriated what before had been held as a natural right to a royal one, which has been continued to the present time. There is scarcely a community on earth, emerged from a state of barbarism, that has not found it necessary to establish laws for restraining the natural ardour of man for this pursuit, to prevent it being followed to an extent that might be injurious to society.

Such has been the zeal of mankind, from the most remote periods of history, for preserving favourite stags, and the frequency of punishment awarded to those who injured them, that Virgil thought an incident of this kind a proper one for the whole plot of the Æneid to turn on :—

> "A favourite stag
> Was of the dire distress the leading cause.
> It raised suspicions first, then roused the sons
> Of violence to war."

Pliny says that the chase gave rise to monarchical states. "In the earliest ages," says that historian, "men had no private possessions. They passed their lives devoid of fear and envy, having no other enemies than the beasts of prey, and, consequently, the hunting and destroying these were their principal occupations ; so that he who exhibited most dexterity, courage, and power naturally became the chief of the hunters of his country, and presided in the assemblies which they convoked for grand hunting occasions, making a general havoc among the ferocious animals which infested their countries, and also for pursuing beasts on which they fed. But, in the sequel, these bands of hunters began to contend for the retreats most abundant in game : they fought for these places, and the vanquished necessarily remained in subjection to the victors ; and thus it was that dominations were formed. Accordingly, it may be naturally inferred, that the first kings and the first conquerors were hunters."

The amusement of hunting was carried so far by our ancestors, that even young ladies of rank and beauty spent much of their time in it. This sport afforded the youthful chieftains an opportunity of displaying their bravery and agility before their mistresses, and game thus taken in their presence was considered a gift of high value by them, and formed the principal viands of their feasts. Long spears, javelins, bows and arrows, were the weapons then employed by hunters; and they were followed by large packs of dogs, which, in those times, were highly esteemed on account of their strength, courage, and exquisite sense of smelling. From an illustrated manuscript, which was written early in the fourteenth century, it appears evident that ladies at that period had hunting parties, without male attendants. These female Nimrods rode astride upon the saddle; but this indecorous custom, it is presumed, was never general, nor had it been long followed even by heroines who were addicted to the chase. An author of the seventeenth century remarks, that "the ladies of Bury, in Suffolk, that used hawking and hunting, were once in great vein of wearing breeches." And we know that Queen Elizabeth was passionately fond of the chase, and often indulged in it, even up to her seventy-seventh year.

In the middle ages the Scottish monarchs hunted in the Highlands, sometimes in a state of Eastern magnificence. For the reception of James V., the queen, his mother, and the ambassador from the pope, the Earl of Athol constructed a palace of green timber, interwoven with boughs, moated around, and provided with turrets, portcullis, and drawbridge, and furnished within with whatever was suitable for a royal abode. The hunting continued for three days, during which, independent of roes, wolves, and foxes, six hundred deer were captured—an incredible number, unless we suppose that a large district was surrounded, and the game drawn into a narrow circle to be slain, without fatigue, by the king and his retinue. On their departure the Earl set fire to the palace, an honour that excited the ambassador's surprise; but the king informed him that it was the custom of Highlanders to burn those habitations which they deserted. The Earl's hospitality was estimated at the expense of a thousand pounds daily; at present equivalent, at least, to three thousand pounds sterling.

OF BRITISH FORESTS.

The term forest implies a large extent of wood, which is thus defined by Manwood, in his Forest Laws. "A forest is a certain territory of woody grounds, and fruitful pastures, privileged for wild beasts, and fowls of forest, chase, and warren, to rest and abide there in the safe protection of the king, for his princely delight and pleasure; which territory of ground so privileged is meered, and bounded by unremovable marks, meeres, and boundaries, either known by matter of record, or else by prescription, and also replenished by wild beasts of venery or chase; and with great covert of *vers*[*] for the succour of the said wild beasts; for the preservation and continuance of which said place, together with the vert and venison, there are certain particular laws, privileges, and officers, belonging only to the same."

Forests are instituted in the following manner:—"The king sends out his commission, under the great seal of England, directed to certain discreet persons, for the view, perambulation, meeting, and bounding of the place he mindeth as a forest; which being returned into the chancery, proclamation is made throughout all the shire where the ground lyeth, and none shall hunt or chase any manner of wild beasts in that precinct, without the king's special licence; after which he appointeth ordinances, laws, and officers, fit for the preservation of the vert and venison; and so it becometh a *forest* by matter of record."

---

[*] *Vert*, which in French signifies "green," and signifies everything in the forest which bears green leaves.

Strictly speaking, a forest cannot be in the hands of any one but the king, because no other person has power to grant a commission to be a justice in eyre, to hold courts, &c.

Canute made a law, that every freeman who hunted a stag until he panted, was punished by loss of liberty for one year; and if he was a bondsman, he was outlawed. The Norman kings not only enclosed forests, but also punished with the utmost severity those who hunted and killed any of the beasts. As an instance of which we are informed by Brompton, that William I. caused the eyes of a man to be plucked out, who took either a buck or a boar. In some cases they were punished with death; and Knighton tells us that William Rufus would hang a man for taking a doe.

Henry I. considered it as great a crime to kill a buck as a man, and punished those who destroyed the game (though not in the forest) either by forfeiture of their goods, or by lost of a limb. Henry II. was less arbitrary, and restricted it to personal imprisonment for a limited time. Richard I. revived the old laws of castration and putting out the eyes of the delinquent. He, however, afterwards abolished those cruel punishments, and appointed those convicted to abjure the realm, be committed, or pay a fine.

We are informed by those historians who wrote at the time the New Forest, in Hampshire, was formed, that it was done at the expense of breaking up twenty-two parish churches, and many villages, chapels, and manors, for the space of thirty miles.* To this circumstance some attributed the misfortunes which befel various princes in that forest: Robert, the eldest son of William the Conqueror, was hung on a bough in the forest; William Rufus was shot by Tyrrel; and Prince Richard, the brother of Henry I., was killed by a soldier.

---

* Walter Mapes, who wrote in the following age, gives what we must suppose to be an exaggerated account of that event. He says, "The Conqueror took away much land from God and man; converted its use to wild beasts, and the sport of dogs; demolished thirty-six

Although the laws have not been annulled, yet they are to a great extent mitigated, and by degrees become entirely obsolete, but from their root has sprung the present game-laws. The government of the New Forest, however, differs but little at present from what it was originally, except that the abolition of Forest Law has limited the power of its officers, the chief of whom is called the Lord Warden.

The following are properly the beasts of the forest, viz.,—the hart, hind, hare, boar, wolf, and fox; but legally all animals are beasts of venery.

The total number of forests in England is sixty-nine. Amongst the most noted are, New Forest, Windsor, Berkshire, Pickering, Sherwood, Englewood, Cumberland, Lancaster, Wolmere, Gillingham, Knaresborough, Wallham, Caral, Breden, White Hart, Wiersdale, Lownfall, Dean, St. Leonard's, Weybridge, Sapler, Whitney, Feckenham, Rockingham, Forest-de-la-Mer, Huckleflow, Ashdown, Sussex, Whittlewood, Swacy, Frouselwood, Watterdown, Andleworth, and Darlington.

TERMS AND PHRASES USED IN HUNTING.

1. *For animals that are in company.*—A *head* of harts, a *bey* of roes; a *sounden* of wild boars; a *rout* of wolves; a *richess* of martins; a *brace*, or *leash* of bucks, foxes, or hares; a *couple* of rabbits.

---

mother-churches, and driving away the inhabitants of many towns, measuring together fifty miles in compass."

2. *For their abodes.*—A hart *harbours;* a buck *lodges;* a roe *beds;* a hare *seats*, or *forms*; a rabbit *sits*, and *burrows;* a fox *kennels*, and *earths;* a martin *trees;* an otter *watches;* a badger *earths;* a boar *couches.* From these the terms *unharbour* the hart; *rouse* the buck; *start* the hare; *bolt* the rabbit; *unkennel* the fox; *untree* the martin; *vent* the otter; *dig* the badger; and *rear* the boar.

3. *The noise they make in rutting-time.*—A hart *belleth;* a buck *groans*, or *troats;* a roe *bellows;* a hare *beats*, or *taps;* an otter *whines;* a boar *freams;* a fox *barks;* a badger *shrieks;* a wolf *howls.*

4. *For the footing or treading.*—We say the *slot* of a hart; the *view* of bucks, or fallow-deer. Of deer when on the grass, and hardly visible, the *foiling.* The *print* of a fox; the *footing* of other animals, called vermin; the *track* of a boar; the *soreing* of a hare, and, when she bounds about, *doubling;* when her feet are seen on the highway, *pranking;* and the *traces*, when her footmarks are in snow.

5. *The tail of a fox* is called the *brush*, or *drag;* of all the deer tribe, the *single;* of a boar, the *wreath;* of a wolf, the *stern;* of a hare, or rabbit, the *scut.*

6. *The ordure and fæces* of all kinds of deer, the *fewmets*, or *fewmishing;* of a hare, the *crotiles*, or *crotising;* of a boar, *lesses;* of a fox, the *billiting;* of an otter, the *spraints;* of other vermin, the *fuants.*

7. *The attire or horns of deer.*—A stag has the *bur*, the *pearls*, which are little knobs on it; the *beam* with the *gutters*, the *antler, sur-antler, sur-royal, royal*, and the top are the *croches.* A buck has *bur, beam, brow-antler, black-antler, advamen palm*, and *spellens.* If the croaches grow in the form of a hand, it is called a *palm-head.*

8. We say a *litter* of cubs; a *nest* of rabbits; the *drag* of a squirrel.

9. *In speaking of dogs in society.*—Two are a *brace* of greyhounds, and three are a *leash*. A *couple* of hounds, and when three, a *couple-and-half*. Greyhounds are *let slip*. Hounds are *cast off*. The string wherewith a greyhound is led is called a *leash*, or *slip*, and that of a hound, *lyome*. We speak of the *collar* of a greyhound, pointer, setter, &c., and the *couples* of hounds of all kinds. Speaking of stag or foxhounds, we say a *kennel;* and of beagles, a *pack*. Lately, however, the word pack is almost entirely used for all kinds of hounds, whether stag-hounds, fox-hounds, harriers, or beagles

In Great Britain, the different chases which are pursued are, stag, fallow-deer, roe-buck, fox, hare, badger, and otter.

When hounds are cast off and find the scent of game, they begin to *open and cry*, which is termed *challenging*. When they make much ado about scent, which is not good, they are said to *babble;* and when too busy, even when it is good, they are said to *bawl*. When they run merrily and orderly in pursuit, they are said to be in *full cry*. When they run without opening they are said to *run mute*. When beagles bark and cry at their prey, they are said to *yearn*. When dogs hit the scent the contrary way to that which the animal ran, they are said to *draw amiss*.

When dogs run at a whole herd of deer, without singling out one, it is called *running riot*

When dogs are set in readiness where the game is expected to come by, and cast off after the other hounds are passed, it is called a *relay*. If they be cast off before the other dogs come up, it is termed a *vaunt*.

When the horn is blown to encourage the hounds, it is termed a *call*, or a *recheat*. When blown at the death of all kinds of deer, it is called the *mort*. The part of animals given to the dogs is called the *reward*. They say *take off* a deer's skin, *strip* or *case* a hare, fox, and all sorts of vermin, which is done by beginning at the snout, and turning the skin over the ears down to the tail.

With respect to the seasons for pursuing different animals, stag and buck-hunting begins a fortnight after Midsummer, and lasts till Holyrood-day; and that for the hind and doe begins at Holyrood-day, and lasts till Candlemas. Fox-hunting begins at Christmas; hare-hunting begins at Michaelmas, and lasts till the end of February; and where the wolf and wild boar are hunted, the seasons commence at Christmas, the first ending at Ladyday, and the last at Purification.

A stag which has had the honour of being hunted by the king or queen is styled a hart-royal.

STAG-HUNTING.

In former times stag-hunting was chiefly confined to royalty, and when the nobles afterwards were permitted to exercise this privilege, it led to many deadly feuds, as the barons were jealous of any encroachments on their bounds; and when such took place, either from thoughtlessness or wantonly, broils were almost certain to be the consequence. Hunting and war were the only employment of the nobility in those uncivilized times.

This sport in Great Britain has become nearly a dead letter, and the only pack of staghounds which exists is in the royal establishment at Ascot Heath, in Windsor Forest. The late Earl of Derby kept a pack at Oaks, near Epsom, in Surrey, which are now dispersed; and a pack was kept at Cheltenham. The only advantage which stag-hunting has over that of a fox-chase, is the chance of a much better run; but the damage which so long a continuance does to horses counterbalances the pleasure derived from the chase, as many fine horses are ruined for life after a severe run; and even the riders have been known to suffer much from what must rather be considered a fatigue than a pleasure.

There is no authentic account of the first establishment of the royal stag-hounds; we learn, however, by a letter from Mr. Rowland White to Sir Robert Sidney, dated September the 12th, A.D. 1600, that "her majesty (Queen Elizabeth, who was then in her seventy-seventh year) is well, and exceedingly disposed to hunting, for every second day she is on horseback, and enjoys the sport long." It is certain that this queen was rapturously fond of hunting, and frequently indulged in it; and to this may be ascribed the great age and vigorous health which she enjoyed. During that reign the royal establishment consisted of packs of buckhounds, staghounds, harriers, and other dogs, with a suitable retinue for the care of each, the aggregate amount of which cost only in those days £240. 4s. 11d. At that period, we presume, the expense was solely defrayed by the privy-purse; but in a subsequent reign a new arrangement took place, and the stag-hounds became part of the crown-establishment, with increased salaries and other advantages to the suite attending them. On the accession of George III. to the throne, this establishment met with still higher honours and local privileges. The kennel is situated upon Ascot Heath, near the racecourse, a distance of about six miles from Windsor Castle; and about a mile from the kennel is stationed Swinley Lodge, a spot replete with all the beauties of romantic and rural scenery. This is the official residence of the master of the staghounds, an appointment of great honour, always conferred on a person of high rank, with a salary of two thousand pounds per annum, and his presence in the field is not at all times required; but it is indispensably necessary when the king or queen are to hunt.

The stamp of royalty has given to stag-hunting a kind of eclat. Its chief claim to excellence, however, may be in a great measure attributed to the splendour of the scene, and the vast assemblage of people which attend in fine weather; for it has been allowed by most persons who, from indulging in both sports, have had an opportunity of judging, that stag-hunting is by no means to be compared to the pleasures of a fox-chase, with a well-trained pack of hounds.

Differently from fox and hare-hunting, it is always the practice, if possible, to take the stag alive, every one present exerting all his energies for the preservation of the animal, which, being deprived of the natural advantages of an open country, has not a fair chance of saving his life.

Her majesty's staghounds were out on Wednesday, the 31st March, 1847. The meeting, which consisted of upwards of two hundred noblemen and gentlemen, took place at Brick-Bridge, when there was an excellent run, an account of which we extract from "The Morning Herald." "The uncarting of the fine deer, Rory O'More, taking place at the Weston Mills. Rory, after making back to Brick-Bridge, through Shottisbrook, and crossing the park, doubled to the left by the railway towards Twyford, over the line of the Great Western Railway, to Knowl-hill; down to Hurley-Bottom, and into the village, where it swam over the Thames into Oxfordshire; the hounds being taken round over the ferry, about a mile up the river. The deer, upon the pack being again laid on, made away towards Marlow, leaving the town to the left, to Chisbridge Cross, where it was headed back to Skirmet, and taken in the village after a good run of two hours and a half at a *racing* pace, up to its taking to the water at Hurley."

When the stag is driven to extremities, he manifests great courage. To test this, a hundred years ago, William, Duke of Cumberland, directed that an area should be inclosed, and a stag and hunting tiger put into it. The stag made such a resolute defence, that the tiger abandoned the attack. On a lawn a space was fenced with very strong toiling, fifteen feet high, into which an old stag was turned, and shortly after the tiger was led in, hood-winked, by two blacks who had the care of him, and set at liberty, after the covering was removed from his eyes. The instant he saw the deer he crouched down on his belly, and, creeping like a domestic cat at a mouse, watched an opportunity of safely seizing his prey. The stag, however, warily turned as the tiger turned, and the antagonist still found himself opposed by his formidable brow antlers. In vain the tiger attempted to turn his flanks; the stag displayed so much generalship: and this cautious warfare lasted until it became tedious, when his royal highness inquired, if by irritating the tiger the catastrophe of the combat might be hastened; he was told it might be dangerous, but it was desired to be done. The keepers went to the tiger, and obeyed the orders of the duke, when immediately, instead of attacking the deer, with a furious bound he sprang at and cleared the toiling that enclosed him. It may be well conceived the consternation he spread among the numerous spectators outside; but instead of meddling with any of them, he hastily crossed the road and rushed into the opposite wood, where a herd of fallow-deer happened to be feeding, and instantly fastened on the haunch of one of them, and brought the animal to the ground. His keepers, to whom he was perfectly familiarised, for some time hesitated to go near him; at length they ventured, cut the throat of the deer, and separating the haunch he had seized, which he never left from his hold a moment, hood-winked, and led him away with it in his mouth.

FOX-HUNTING.

For horses of the turf and hunting no country has been able to cope with those of Britain; and our hounds have for many centuries surpassed all others. Our aristocracy have for ages been zealously addicted to the pleasures of the chase, which maintains its ground to the present day, being pursued with unabated ardour. Fox-hunting is a sport at once exhilarating and healthful, and, to those who have a taste for it, one which contributes much to raise the animal spirits. Indeed, the energising effects of hunting can hardly be conceived by those who have not participated in the sport; and a condensed description of it is no easy task. This has, however, been very successfully treated by a zealous and accomplished sportsman, who has gone minutely into the prominent points, and even many of the most essential details, with such graphic and poetic effect, that it at once conveys to the mind's eye of any one who has followed the sport a better delineation than we could attempt without the accusation of plagiarism being imputed to us. We shall therefore give it in the words of its accomplished author:—

"The hour in the morning most favourable to the diversion is certainly an early one; nor do I think I can fix it better than to say, the hounds should be at the cover at sun-rising. Let us suppose we are arrived at the cover-side—

'Delightful scene!
Where all around is gay, men, horses, dogs;
And in each smiling countenance appears
Fresh blooming health, and universal joy.'
SOMERVILLE.

"Now let the huntsman throw in his hounds as quietly as he can, and let the two whippers-in keep wide of him on either hand, so that a single hound may not escape them; let them be attentive to his halloo, and be ready to encourage or rate as that directs; he will, of course, draw up the wind, for reasons which I shall give in another place. Now if you can keep your brother sportsmen in order, and put any discretion into them, you are in luck; they more frequently do harm than good: if it be possible persuade them who wish to halloo the fox off, to stand quietly under the cover side, and on no account to halloo him too soon; if they do, he most certainly will turn back again: could you entice them all into the cover, your sport in all probability will not be the worse for it,

"How well the hounds spread the cover! the huntsman, you see, is quite deserted, and his horse, which so lately had a crowd at his heels, has now not one attendant left. How steadily they drag! you hear not a single hound, yet none are idle. Is not this better than to be subject to continual disappointment, from the eternal babbling of unsteady hounds?

'See! how they range
Dispersed, how busily this way and that
They cross, examining with curious nose
Each likely haunt! Hark! on the drag I hear
Their doubtful notes, precluding to a cry
More nobly full, and swell'd with every mouth.'
SOMERVILLE.

"How musical their tongues! Now, as they get nearer to him, how the chorus fills! Hark! he is found. Now, where are all your sorrows and your cares, ye gloomy souls? or where your pains and aches, ye complaining ones? One halloo has dispelled them all. What a crash they make!—and *echo* seemingly takes pleasure to repeat the sound. The astonished traveller forsakes his road, lured by its melody; the listening ploughman now stops his plough; and every distant shepherd neglects his flock, and runs to see him break. What joy—what joy!—what eagerness in every face!

> 'How happy art thou, man, when thou'rt no more
> Thyself! when all the pangs that grind thy soul,
> In rapture and in sweet oblivion lost,
> Yield a short interval, and ease from pain!'
>
> SOMERVILLE.

Mark how he runs the cover's utmost limits, yet dares not venture forth; the hounds are still too near—that check is lucky;—now, if our friends head him not, he will soon be off—hark! they halloo!—By Jove, he's gone!

> 'Hark; what loud shouts
> Re-echo through the groves! he breaks away:
> Shrill horns proclaim his flight. Each straggling hound
> Strains o'er the lawn, to reach the distant pack
> 'Tis triumph all and joy.' SOMERVILLE.

Now, huntsman, get on with the head hounds, the whippers-in will bring on the others after you: keep an attentive eye on the leading hounds, that, should the scent fail them, you may know at least how far they brought it.

"Mind *Galloper*, how he leads them!—It is difficult to distinguish which is first, they run in such a style; yet he is the foremost hound;—the goodness of his nose is not less excellent than his speed. How he carries the scent! and when he loses it, see how eagerly he flings to recover it again. There—now he's a-head again—see how they top the hedge!—Now, how they ascend the hill!—Observe what a head they carry; and show me, if you can, one shuffler or skirter amongst them all: are they not like a parcel of brave fellows, who, when they undertake a thing, determine to share its fatigue and its dangers equally amongst them.

> 'Far o'er the rocky hills we range,
> And dangerous our course; but in the brave

True courage never fails. In vain the stream
In foaming eddies whirls, in vain the ditch
Wide gaping threatens death. The craggy steep,
Where the poor dizzy shepherd crawls with care,
And clings to every twig, gives us no pain;
But down we sweep, as stoops the falcon bold
To pounce his prey. Then up th' opponent hill,
By the swift motion slung, we mount aloft:
So ships in winter seas now sliding sink
Adown the steepy wave, then toss'd on high
Ride on the billows, and defy the storm.'

SOMERVILLE.

" It *was* then the fox I saw as we came down the hill.—Those crows directed me which way to look, and the sheep ran from him as he passed along. The hounds are now on the very spot, yet the sheep stop them not, for they dash beyond them. Now see with what eagerness they cross the plain. *Galloper* no longer keeps his place, *Brusher* takes it: see how he flings for the scent, and how impetuously he runs! —How eagerly he took the lead, and how he strives to keep it; yet *Victor* comes up apace.—He reaches him!—see what an excellent race it is between them!—It is doubtful which will reach the cover first.—How equally they run; how eagerly they strain;—now Victor, Victor!—Ah! Brusher, you are beat; Victor first tops the hedge.—See there! see how they all take it in their strokes! the hedge cracks with their weight, so many jump at once.

" Now hastes the whipper-in to the other side the cover; he is right, unless he heads the fox.

' Heavens! what melodious strains! how beat our hearts,
Big with tumultuous joy! the loaded gales
Breathe harmony! and as the tempest drives
From wood to wood, thro' every dark recess
The forest thunders, and the mountains shake.'

SOMERVILLE.

Listen !—the hounds have turned. They are now in two parts ! The fox has been headed back, and we have changed at last.

" Now, my lad, mind the huntsman's halloo, and stop to those hounds which he encourages. He is right ;—that, doubtless, is the hunted fox.—Now they are off again.

> ' What lengths we pass ! where will the wand'ring chase
> Lead us bewildered ! smoothe as swallows' skim,
> The new-shorn mead, and far more swift, we fly.
> See my brave pack ; how to the head they press,
> Jostling in close array, then more diffuse
> Obliquely wheel, while from their op'ning mouths
> The vollied thunder breaks.
> Look back and view
> The strange confusion of the vale below,
> Where sore vexation reigns.
> Old age laments
> His vigour spent : the tall, plump, brawny youth
> Curses his cumb'rous bulk ; and envies now
> The short Pygmean race, he whilom kenn'd
> With proud insulting leer. A chosen few
> Alone the sport enjoy, nor droop beneath
> Their pleasing toils.'
>
> SOMERVILLE.

" Ha ! a check.—Now for a moment's patience.—We press too close upon the hounds.—Huntsman, stand still ; as yet, they want you not.—How admirably they spread ! how wide they cast ! is there a single hound that does not try ? If such a one there be, he ne'er shall hunt again. There, *Trueman* is on the scent ; he feathers, yet still is doubtful ; 'tis right ! how readily they join him ! See those wide-casting hounds, how they fly forward to recover the ground they have lost ! Mind *Lightning,* how she dashes ; and *Mongo,* how he works ! Old *Frantic,* too, now pushes forward ; she knows as well as we the fox is sinking.

> 'On! yet he flies, nor yields
> To black despair. But one loose more, and all
> His wiles are vain. Hark! thro' yon village now
> The rattling clamour reigns. The barns, the cots,
> And leafless elms return the joyous sound.
> Through every home-stall, and thro' ev'ry yard,
> His midnight walks, panting, forlorn, he flies;
> Th' unerring hounds
> With peals of echoing vengeance close pursue.'
> SOMERVILLE.

"Huntsman! at fault at last! How far did you bring the scent? Have the hounds made their own cast? Now make yours. You see that sheep-dog has been coursing the fox; get forward with your hounds, and make a wide cast. Hark! that halloo is indeed a lucky one.—If we can hold him on, we may yet recover him; for a fox so much distressed must stop at last. We shall now see if they will hunt as well as run, for there is but little scent, and the impending cloud still makes the little less. How they enjoy the scent! see how busy they all are, and how each in his turn prevails.

"Huntsman! be quiet! While the scent was good, you pressed on your hounds; it was well done. Your hounds were afterwards at fault;—you made your cast with judgment, and lost no time. You now must let them hunt: with such a cold scent as this you could do no good.—They must do it all themselves.—Lift them now, and not a hound will stop again.—Ha! a high road, at such a time as this, when the tenderest-nosed hound can hardly own the scent! —Another fault! That man at work there has headed back the fox. Huntsman! cast not your hounds now, you see they have overrun the scent; have a little patience, and let them for once try back.

"We must now give them time;—see where they head towards yonder furze brake; I wish he may have stopped there. Mind that old hound, now he dashes o'er the furze; I think he minds him;—now for a fresh *entapis*;—Hark! they holloo;—Aye, there he goes.

"It is near over with him; had the hounds caught a view, he must have died. He will hardly reach the cover;—see how they gain upon him at every stroke! It is an admirable race; yet the cover saves him.

"Now be quiet, and he cannot escape us; we have the wind of the hounds, and cannot be better placed;—how short he runs;—he is now in the very strongest part of the cover.—What a crash! every hound is in, and every hound is running for him. That was a quick turn!—Again another!—he's put to his shifts.—Now *Mischief* is at his heels, and death is not far off.—Ha! they all stop at once:—all silent, and yet no earth is open. Listen!—now they are at him again.—Did you hear that hound catch view? they had overrun the scent, and the fox had laid down behind them. Now, Reynard, look to yourself. How quick they all give their tongues!—Little *Dreadnought*, how he works him! the terriers too, they are now squeaking at him. How close *Vengence* pursues! how terribly she presses! it is just up with him.—Gods! what a crash they make! the whole wood resounds.—That turn was very short.—There—now; Aye, now they have him.—Who-hoop!"

Twenty-five couples of hounds are enough to take into the field at a time, they are a match for the best fox, if they are steady; too many hounds always yield less sport than a proper number. Forty couple of hounds, will suffice for hunting three times a week, which is as much as any man ought to do.

Hounds will never run well together that have too many old ones amongst them. Few hounds hold good more than five or six seasons, although there are instances of their lasting longer. But, of course, much depends upon the labour which they are subjected to. A spayed bitch, called Lilly, ran at the head of old Mr. Panton's pack at Newmarket, for ten seasons. All packs possess one or two dogs which are superior to the others in point of speed, bottom and high olfactory senses.

The duties of a huntsman in the field are varied, and in some instances complicated, and much of the successes and pleasures of the sport will depend upon his judgment, skill, and experience. He should have such discrimination as to make the most of existing circumstances, and must be capable of knowing the difference of *hunting* a fox, or killing him with *hard running*.

A chase should never be less than of an hour's duration, and if the hounds are properly hunted it should not exceed two hours, under ordinary circumstances. The beauty of a fox-chase is to see dogs leaping over a fence, as they ought never to creep under what they can clear.

The reason of good or bad scent is a puzzling theme to sportsmen. Sometimes it lies close to the ground, and at others it leaves its effluvia in the atmosphere. When the gravity of the air sustains it suspended, the scent is said to be breast-high. The lying of the scent will frequently alter in one day, depending upon temperature and moisture, as well as the quarter from which the wind blows. In short a multiplicity of causes give rise to the scent lying ill or well.

Foxes prefer covers that lie high and dry, and thick at bottom, and those that are out of the wind, and on the sunny side of the hill. Foxes are stronger and wildest about Christmas, at which season the huntsman must lose no time in drawing, and should be as silent as possible.

Coppices, of three or four years standing, with heath or furze at bottom, are the most likely retreats of foxes.

When there are plenty of foxes in a string of covers, considerable caution is necessary to prevent them from being all disturbed in one day. Foxes generally go down the wind to their kennel, therefore, the huntsman should begin drawing the furthest cover down the wind, and proceed from one cover to another, up the wind, till he finds a fox. This precaution will be attended with these advantages : he will draw the covers more speedily, there will be less difficulty in getting hounds away, and as the fox most likely will near the covers already down, there is less probability of changing, and those covers which are up the wind, beyond where the fox is found, remain quite undisturbed.

Large covers should be first well traversed before proceeding to smaller ones, as by the reverse system, the foxes are driven to where there are plenty already. Hounds that come away with the first fox that breaks cover, do not disturb the cover, and, therefore, the same part may be again tried, with pretty good prospect of success ; but when foxes are scarce, the same cover should never be drawn two days successively.

Furze covers should always be very closely drawn, and if a fox is found in them, he should never be hallooed until quite clear of them ; from such situations, hounds are certain to go off well with him; but if too hastily hallooed, the fox will naturally return to cover, and is certain immediately to fall a victim to the hounds.

Long drags, in large covers, always give advantage to the fox, who frequently takes the hint, and escapes with all due alacrity ; this, however, may be prevented, by throwing the hounds into that part of the cover where he is most likely to kennel; the huntsman, in such a case, should be careful not to take the heel of the drag. When it so happens that the fox gets so far a-head of the hounds that they are obliged to follow him with a bad scent, it will be better to draw them off, and seek for another, if they are plentiful in the neighbourhood. However, this must not be too frequently practised, as it is apt to render hounds indifferent when they are upon a cold scent, and they should be encouraged to believe that they are to kill that animal which they are first led in pursuit of.

When the pack approach a cover that is intended to be drawn, and dash away towards it, the whippers-in often try to stop them, which is not to be recommended, as it is time enough to chastise hounds when they have found and pursue improper game. When hounds are not under due subjection, they frequently dash off from the huntsman on nearing a cover, and then stop without entering it; but hounds under proper command, will not leave the heels of the huntsman until they are encouraged to advance, after which they are so confident of what is required of them, that they proceed to range steadily until they find their game.

Whilst hounds are in the act of drawing, the company should disperse themselves, so that the fox cannot escape unseen; and gentlemen that are noticed together in pairs, it is nearly certain that at least one of them is a novice in fox-hunting. It too frequently happens, that of the many followers in a chase, few of them are really sportsmen, and consequently fail to give that proper assistance, which every genuine lover of the sport considers himself bound to contribute. The consequence is, that a Johnny raw will see a hound run riot, without stopping him; nor will they stand quiet a few moments even for the purpose of hallooing a fox, although attention to those simple points would have tendency to promote their own amusement.

The first day a cover is hunted, where there are plenty of foxes, and blood is wanted, they ought not to be headed back into the cover, but allow some of them to get off, otherwise with continual changing, and sometimes running the heel, it is probable the hounds will not kill any. It may also be necessary to exercise another precaution, which is, to stop such earths only as cannot be dug; if foxes earth, and blood be wanted at last, it will then be known where to get it. Young foxes which have been much disturbed, are sure to lie at ground, and consequently the earths at such times should be stopped three or four hours before daybreak, when the animals are in search of food, otherwise no foxes will be found.

The judicious sportsman will take care not to draw covers near the kennel, while foxes can be found elsewhere. By such a precaution, foxes will be got there, when they can be had nowhere else, especially when hounds go out late. Nor should they be much disturbed after Christmas, as foxes will then resort to and breed in them, and from their contiguity they can be protected with little trouble.

In situations where foxes are plentiful, there is no occasion for fixing an early hour of meeting. Where foxes are weak, by hunting late they give better chases; but when strong, the advantage of an early hour should be given to the dogs. When the hunt is late, the pack should be immediately led to the spot where they are most likely to find, and that is, in those covers which have been least frequented by dogs. In cases where a fox is not found, a long and tedious day is the consequence; and where the cover is thick, particularly from the prevalence of furze, it should be drawn slowly: at a late hour of the day, a fox is very likely to keep his kennel, until hounds come close up to him.

A good huntsman will always be as silent as possible when his hounds go into cover; and he cannot be too noisy when they have emerged from it again; and if circumstances render it necessary that he should turn back suddenly, he should prepare his hounds for it, by giving them due notice, otherwise many will be left behind; and should he turn down the wind, he may not again see them that day.

It too frequently happens that when a fox is first found people give vent to their delight, and consequently excite the hounds too soon, which are always endowed with sufficient enthusiasm to be easily restrained on finding. The hounds should be fairly off in the pursuit before equestrians attempt to shout or move. The huntsman should set off with the leading hounds, which will prevent others from slipping down the wind, and getting out of hearing. In urging hounds forward, when the scent lies well, it is necessary to guard against hurrying them beyond it, when it is bad; the huntsman should keep as close to them as possible, so that he may observe how far they carry the scent; and without due attention to this he can never make a cast with any degree of certainty. The huntsman ought always to be on the alert, to direct the dogs, which when they are first at fault is then most critical; a foxhound at that moment will exert himself most to re-find, and afterwards will become very indifferent about it. Huntsmen who do not aid hounds in this case are not up to their business, and can never hunt a pack with advantage.

When the scent is high let the hounds be pushed forward with all possible speed; screams from the followers keep the fox forward, and the hounds together; and halloos are very serviceable when hounds are running up the wind, for then none but the tail hounds can hear them; but when running down the wind halloos should never be used too often, and they are only necessary to induce the tail hounds to press forward. Hounds that are well trained seldom require encouragement.

Halloo forward is decidedly a necessary one, but should never be used until a fox is found, and then they will fly to it. *Gone away* is a halloo to signify that a fox breaks cover, and of course is only used on that occasion, and ought to be given loudly, so that those gentlemen may hear it who remain behind to assist hounds when they leave the cover.

When a fox is killed hounds should eat him ravenously: he should be flung across the branch of a tree, if there is one at hand, and the hounds allowed to bay at him for some minutes before he is thrown among them: it will teach them the meaning of a *tally-ho*, and learn them to fly rapidly to it, and make them more eager; besides, it will afford time for all the pack to congregate, and also recover their wind, and consequently will enable them to eat him more readily.

In parts of the country where foxes are scarce, bag-foxes are frequently had recourse to, but they seldom afford good sport. There are many objections to this amusement. In the first place, the scent of them is unlike to other foxes; it is *too good*, or in other words too strong, and is apt to make dogs idle, and has, in the second place, a tendency to make hounds extremely wild. When dogs are accustomed to hunt bag-foxes, they generally know what they are going to do before they begin, and then they are so riotous that they will run at any game or animal which may happen to come in their way. A fox that has been long kept in a small place, and afterwards carried out in a bag, is likely to be strongly tainted by his own ordure; and for want of his natural food and proper exercise, his system is weak and his limbs cramped, and besides being low in spirits; and when turned out he neither knows the country, nor has he a settled point to make for. It is therefore not to be wondered at, that bag-foxes seldom or ever make a good run. Bag-foxes invariably run down the wind, but lose time in not knowing what to do, while the hounds follow very close to them; thus they are spoiled from running a cold scent: on the first day they may be out; more especially if they chance to be led to a hard stony road, or among flocks of sheep, or over a greasy fallow.

The only means of obviating the effect of turning out a fox from a bag before the hounds, and thus vitiating their taste for finding, is to take him to a cover, at some distance from the hounds, and there turn him out. The pack should be brought to the spot, and led to believe that they have found him themselves.

When a fox goes to ground after a long hunt, and the hounds want blood, it is best to kill him in the earth, taking care to stop all the holes while digging lest he should bolt. If the hole be straight, and the earth light, follow it, and by keeping below its level it cannot be lost; but where the earth is strong, the best method is to let the terrier fix the fox in an angle of it, and a pit sunk to him as near as possible: keep the terrier at him, lest he should shift his position, and where the ground is loose dig himself deeper. In digging, keep plenty of room, taking care not to throw the earth where it may be required to be again moved. It is a bad practice to allow hounds to draw the fox, and should never be permitted. To save digging, a piece of whipcord may be attached to the end of a stick, which the fox is sure to seize, when it may be twisted tight round either his upper or under jaw, and then he may be easily drawn.

It is a most injudicious practice for gentlemen to purchase young foxes, as it only encourages the theft of them, and cannot fail to prove injurious to hunting in general. It is a wise plan to pay gamekeepers for protecting earths, during the breeding season. Furze covers are decidedly the best, and more safe as breeding places.

To those who breed cubs for the supply of their covers, a court, open at the top and securely walled in, will be necessary, which must be either paved or laid with brick, and provided with wooden corners for the animals hiding themselves. But what is still better, a pit of about twelve feet long by six wide, and three feet deep, should be built all round, and then filled up with earth, so that the foxes may burrow in it. By this means, the animals will be living there in a state of nature, which will render them more hardy when turned out, when they will have no other shelter than a burrow. They should always be turned out in the morning, and food put down at the entrance of the burrow where they are wished to remain. They must be regularly fed for some time afterwards, with rabbits, sheep's paunches, and birds, and if a sheep happens to die, it may be laid down near their earth, which will serve them for some time. Attention to these points are the most likely means of preventing them from wandering, and taking up their abode at a distance.

It is injudicious to hunt after February, as the females are then pregnant, and are easily run down. Besides, to kill one while with young is the loss of the entire litter. Mr. Daniel observes :—" The foxes' heads so pompously exposed against every kennel door, that the huntsman may say he had killed so many brace, (of which foxes many are digged out and killed, when blood is not wanted, for no better reason, and which another day, perhaps, might have run hours, and died gallantly at last ; this is a slavish slaughter, prejudicial to sport in fox-hunting,) does not ascertain the goodness of the hounds, which may be known with more precision from the *few* foxes they *lose*, than from the number they *kill*. In some countries where foxes are very hard to be killed, and not readily found, it is certain they are always stoutest where game and rabbits do not abound: in those countries they have to seek their food further off, and seldom go to their kennels with a gorged stomach; a dozen brace of foxes in such haunts are considered a fair quantity: in an adjoining country full of game, or in other respects more favourable, a pack of hounds will possibly kill twice the number: is it to be at once inferred they are twice as good?

"Those huntsmen who are so fond of unnecessarily getting blood and wasting foxes, would doubtless have been much gratified at the hunting-match given by the Prince Esterhazy, Regent of Hungary, upon the signing of the treaty of peace with France, a day's sport that bids fair to vie in point of blood (if the King of Naples' slaughter be excepted) with any of those recorded in modern history, as there were killed 160 deer, 100 wild boars, 300 hares, and 80 foxes. The king had a larger extent, and a longer period for the exercise of his talents, and it was proved that during his journey to Vienna, in Austria, Bohemia, and Moravia, he killed 5 bears, 1820 boars, 1960 deer, 1145 does, 1625 roebucks, 1121 rabbits, 13 wolves, 17 badgers, 16,354 hares, and 354 *foxes*. The monarch had likewise the pleasure of doing a little in the bird-way, by killing on the same expedition 15,350 pheasants, and 12,335 partridges."

HARE-HUNTING.

Hare-hunting is a sport of great antiquity. Xenophon, who flourished 350 years before the Christian era, has, in his writings, recorded many observations on it. This recreative amusement is more generally pursued than fox-hunting, and there is hardly a state in Europe but possesses many packs of harriers or beagles. It is a very favourite pursuit in Britain; and in many parts of England a chase is numerously followed by pedestrians, who, from some neighbouring eminence, can nearly see the whole of a good chase by merely occasionally shifting ground.

The dogs now used in the chase of a hare are harriers and beagles. During the season they should be hunted every third day, if the state of the weather will permit; but such dogs as do not eat their food heartily, it may be certain they are in ill-health, and should therefore be left at home. It is not judicious to hunt when the wind is high, as it drives off the scent, besides they can neither hear the voices of each other, nor that of the huntsman; consequently little sport can be expected under such circumstances.

Great perseverance, and quiet and patient exertion are indispensable requisites in a huntsman in hare-hunting; and every effort should he made to take the hare: time and a continuous chase are certain ultimately to prevail.

No whipper-in should act without the orders of the huntsman. The field should be entered by all present with quietness, and the dogs should be left to follow their own way. Much noise is at direct variance with the pursuit of hare-hunting. As hounds have a natural propensity for hunting if they cannot carry the scent forward, they will turn and trace it back again, which is one of the principal, if not the only fault which dogs, left to themselves, are likely to be guilty of. This is termed *running back the heel.* Although it is recommended to permit hounds to use their natural instincts in seeking for their game, it may still be requisite to give them a mild check occasionally. Dogs will never be good, if too much led, therefore every means should be used to encourage them to go forward in the scent. But if they are unsuccessful in trying forward, they may then be permitted to try backward, as they are naturally sensible how far they have brought the scent, and how far they have left it behind.

In our description of the harrier we have mentioned the necessity of keeping them to their own game; for if permitted to chase a fox, they will seldom afterwards be reclaimed from pursuing one if it comes in their way. The strong scent left by a fox, the straightness of his course, and the eagerness of the pursuit, all contribute to spoil harriers, and is exceedingly liable to make them skirt.

It is a fault in a pack of harriers to go too fast, as the hare is a timorous animal, which we cannot help feeling some compassion for at the very time we are pursuing her to destruction; we should give scope to all her little tricks, and not kill her faulty and overmatched. Instinct instructs her to use many artful devices to escape: when not unfairly treated, and as far as her own safety is concerned, she is more artful and cunning than the fox, and tries a greater diversity of shifts and artifices to save her life.

> " 'Tis instinct that directs the jealous hare
> To choose her soft abode. With step reversed,
> She forms her doubling maze; then, ere the morn
> Peeps through the clouds, leaps to her close recess."

We have often heard of hares, which were considered witches, from the miraculous escapes they have made; but we believe none ever heard of a fox which had cunning enough to be thought either a wizard or warlock.

The following instances of the sagacity of the hare in endeavouring to escape from its enemies are worthy of notice:—Fouilloux says he has seen a hare start from its form at the sound of the hunter's horn, run towards a pool of water at a considerable distance, plunge itself in, and swim to some rushes in the middle, where it lay down and concealed itself from the pursuit of the dogs. He mentions one which, after running two hours before the dogs, pushed another hare from its seat, and took possession of it. An instance of a similar kind is recorded in the "Sporting Magazine," as having been witnessed during a run with a well-known pack of harriers in the west of England. The hunted hare being nearly exhausted, happened to come upon another hare in her form, from which she drew her out and squatted herself; the pack followed the new-started hare, and the huntsman, on coming up, found the hare which they had been hunting in the seat of the hare the dogs were following, panting very hard, and all covered with mud. Others he has seen run into a sheep-fold, and lie down among the sheep; and some have effected their escape by mounting on an old wall, and clapping themselves down among the old ivy which covered it.

Hares lie so close, and are so much the colour of ploughed soil, that they are very difficult to be distinguished from it. Some people cannot see them in their form, even after they are pointed out. A gentleman on a coursing party with his friends was shown one in that position, who instantly exclaimed, "Is that a hare? Then, by Jove, I found two this morning as we rode along!"

Those who like early rising will find much amusement in seeing a hare trailed to her form: this proves very serviceable to harriers and beagles. It proves their goodness, and enables the huntsman to detect those of his pack which are endowed with the finest sense of smell.

It was the opinion of Mr. Beckford, that hare-hunting should be indulged in merely as a ride after breakfast. But in this case it would be necessary to have persons to find hares for this purpose, as it would be a great loss of time to seek them with the harriers. This would be more especially necessary with the second hare than the first, if one hare were not considered sufficient exercise ; as in a long search persons would be apt to take cold, if the weather was not mild. But hardy and zealous sportsmen will always prefer letting the pack find their own game, and will make a day of the sport. The very excitement kept up by expectation will give a zest to the sport, when one is really found, far beyond what the certainty of finding can give. In short, the practice of employing hare-finders has a strong tendency to make the dogs idle, and wild. The practice has, however, one advantage ; it prevents the dogs from chopping hares, which they sometimes do

Hares have an instinctive property of anticipating a change of weather, and almost invariably betake themselves to the lea-side of their haunts, as they dislike exposure to wind. In enclosed situations, they are generally found nearer to a hedge than to the middle of a field, consequently huntsmen and hare-finders will always resort to such situations, after observing from whence the wind blows. In some parts of the country forms are made, and hares will often take advantage of these, which the sportsman will generally make in situations where they can be seen at some little distance, and therefore can detect whether they are occupied before approaching.

When a hare is found the utmost quietness should be observed, as they are so timid that they may be headed back, and consequently the dogs are liable to lose the scent every few paces. Prudent sportsmen will therefore keep at a considerable distance behind them, that they may have room to turn, so soon as they have discovered that they have lost the scent ; and it will be found that, by this precaution they will seldom greatly overrun the scent. It is a bad practice to halloo the dogs too much : it is far better to allow them to take their own way : every doubling of the hare should be followed, nor is she properly hunted when this is not the case. Every step should be traced through greasy fallows, and flocks of sheep; nor should they even be cast, but under unavoidable circumstances.

> "Let all be hush'd
> No clamour loud, no frantic joy be heard;
> Lest the wild hound run gadding o'er the plain
> Untractable, nor hear thy chiding voice."

The natural ardour of the pack, on such an occasion as this, will lead even the best dogs wide of the scent, while too much encouragement, and crowding close upon them, may completely render recovery impossible. Sportsmen who understand thoroughly the nature of the chase will always avoid this. When a little time has elapsed they may then be approached nearer, and more encouragement given to them; always avoiding, however, pressing so close upon them, as to prevent them from turning, should they overrun the scent. On high roads and dry paths be always doubtful of the scent, nor give them much encouragement; but when a hit is made on either side, you may halloo as much as you please, nor can you then encourage hounds too much. A hare generally describes a circle as she runs, greater or less, according to her strength, and the openness of the country. In enclosures, or where there is much cover, the circuit is generally so small that it proves a constant puzzle to the hounds. They have a gordian-knot in that case, ever to unloose; and though it may afford matter of speculation to the philosopher, it is always contrary to the wishes of the sportsman.

> "Huntsman! her gait observe; if in wide rings
> She wheels her mazy way, in tne same round

Persisting still, she'll find the beaten track.
But if she fly, and with the fav'ring wind
Urge her bold course, less intricate the task;
Push on the pack."

Besides running the foil, hares frequently make doubles, which is going forward, to retrace the same steps, on purpose to confuse their pursuers; and the same manner in which they make the first double they generally continue, whether long or short. If the huntsman will attend to this observation, it may prove useful to him in his casts.

An old hare, when hunted, seems to regulate her flight from the very first, according to the speed of her pursuer. She knows, from experience, that very rapid flight would be less certain of carrying her out of the reach of danger than a more deliberate one, whereby the chase is protracted to a greater length of time, and she can continue the exertion of her strength longer than if she put forth her full speed at first. She seems to have observed that, in grounds where there are many young shrubs, the contact of the whole of the body leaves behind a stronger scent. She, therefore, avoids all thickets, and keeps as much as possible upon beaten roads; but when pursued by greyhounds she runs from them as fast as possible. Knowing that terriers, even though they do not see her, can follow her track: she often practises an admirable stratagem to deceive them. When she has run for a considerable time in a straight line she returns a small distance upon the road she has come, in order to render the scent very strong upon this space of ground; she then makes several long leaps, in a side direction, and thereby renders it difficult to recover the scent. By this means the hounds are often put at fault, and the hare enabled to get a considerable way a-head, and she thereby frequently effects her escape. When they make this double on a high road or dry path, and then leave it with a spring, it is often the occasion of a long fault; as the spring which a hare makes on these occasions is hardly to be credited, any more than her ingenuity in making it; both are wonderful, and exibit proofs of intelligence incomprehensible to man.

> "Let cavillers deny
> That brutes have reason; sure, 'tis something more:
> 'Tis Heaven directs, and stratagems inspire,
> Beyond the short extent of human thought."

She frequently, after running a path a considerable way, will make a double, and then stop till the hounds have passed her; she will then steal away as secretly as she can, and return the same way she came: this is the greatest of all trials for hounds. It is so hot a foil that in the best packs there are not many hounds that can hunt it: you may follow those hounds that can, and try to hit her off where she breaks her foil, which in all probability she will soon do, as she now seems to flatter herself that she is secure. When the scent lies bad in cover, she will sometimes hunt the hounds.

> "The covert's utmost bound
> Slily she skirts; behind them cautious creeps,
> And in that very track, so lately stained
> By all the steaming crowd, seems to pursue
> The foe she flies."

When hounds are at a check, the huntsman should stand still, nor should he permit his horse to move one way or the other; hounds lean naturally towards the scent, and, if he is perfectly silent they will soon recover it.

When the weather is fine good hounds seldom give up the scent at head; if they do, there is generally an obvious reason for it; and a good huntsman will turn his attention to if; and if he does, it cannot fail to direct his cast. He should be attentive as he goes, not only to his hounds, nicely observing which have the lead, and the degree of scent they carry, but also to the various circumstances that are continually happening, from change of weather, and difference of ground. He will also be mindful of the distance which the hare keeps before the hounds, and of her former doubles, and give minute attention what point she makes to. Attention to these observations will prove serviceable, should a long check make the services of the huntsman necessary; and if the hare have headed back, he will carefully observe whether she met with anything in her course to turn her, or if she turned of her own accord. When he casts his hounds he should commence by making a small circle; if that does not suit, he must try a larger one; and this failing, he must then act according to circumstances, endeavouring to hit upon that most likely to succeed. As a hare generally revisits her old haunts, she will return to the place where she was first started; and should the scent be completely dissipated, and the hounds can no longer trace it, by taking the cast from whence she first broke off, she in all probability will be found there again. He should strictly keep in view, that in all his casts the hounds must not be allowed to follow close at the heels of his horse, nor must they carry their heads high, with their noses in the air. Each of the casts they must try for the scent, or it never will be found; and the quickness or slowness of the cast will depend upon the manner in which he perceives the hounds exerting themselves, and whether the scent be good or bad.

Huntsmen should use every means to prevent the harriers from chopping hares, as when allowed to do so, the hare must be very strong or very wild to escape them. Hounds are most apt to chop hares in localities where there is much furze, because it is the nature of the hare to leap up before the hounds come near them, or to steal away. In some instances they will lie close until the dogs nearly touch them. When the huntsman beats hedges for hares, and starts one, it seldom happens to escape, unless the dogs are particularly well trained. They soon know that hares are likely to be found there, and all are upon the alert to seize it; consequently hedges should be beaten by a man considerably in advance of the dogs.

When hares are started in localities which they know well, they seldom run well; and it has been generally noticed that during fog they mostly take a good country, and in the event of their going down the wind, they seldom return; in which case the hounds should be pushed as much as possible, and when the game is sinking the old hounds will get in advance and run at head.

> "Happy the man, who with unrivall'd speed
> Can pass his fellows, and with pleasure view
> The struggling pack; how in the rapid course
> Alternate they preside, and, jostling, push
> To guide the dubious scent; how giddy youth
> Oft babbling errs, by wiser age reproved;
> How, niggard of his strength, the wise old hound
> Hangs in the rear, till some important point
> Rouse all his diligence, or till the chase
> Sinking he finds; then to the head he springs,
> With thirst of glory fired, and wins the prize."

Discard all babblers from the packs, for, although the other dogs will soon find them out, and disregard them, still it is unpleasant to hear their noise, and they are consequently very inappropriate companions for the others.

Keep no dogs which run false; the loss of a single hare is more than such a dog is worth. Although harriers and beagles must be taught that they are not to mouth and destroy the hare, still it is but reasonable occasionally to give them one by way of encouragement. Mr. Beckford always gave the pack the last hare they killed, if they had done their day's work satisfactorily.

Some early sportsmen never permitted a hare to be hallooed, or the hounds to be assisted when at fault, but suffered them to work it out by themselves; this, though tedious, was considered a sure way to ascertain the goodness of the hounds; others, like the *pot-hunters* of the present day, took all advantages, and killed them as speedily as possible.

The method of rewarding the young hounds was curious, and would not exactly suit the designs of many a hare-hunter of the present day. The hare, after being laid on the grass, and bayed by the hounds, was skinned before them; and after the gall and lights were taken away, which were supposed to be peculiarly liable to make the hounds sick, the huntsman, who carried a small wallet with bread cut in pieces, dipped them in the blood, and with the entrails gave them to the hounds; the hare was afterwards distributed, and if any young hound was fearful to come in amongst the rest, he had the head given to him by himself; after this feast, the hounds had bread given to them to prevent sickness. Indeed, it was said that the flesh of an old hare was not very good for man, being hard of digestion, and breeding melancholy blood; but leverets were allowed to be nourishing.

It is a too frequent occurrence first to ride over a dog, and then cry *ware horse!* Great caution should be used not to ride over hounds, as it has spoiled many an excellent dog. When the ground is open, dogs may be first spoken to, and afterwards they may be ridden over; but in roads and narrow paths this must not be done, as it is impossible they can get out of the way, and the rider, in such circumstances, should draw up, as it is most cruel to ride among a pack and seldom fails to destroy the sport. Good sportsmen will seldom ride on a line with the tail hounds.

There is considerable diversity of opinion respecting the choice of hounds for hare-hunting ; some preferring harriers, while others think a chase with beagles far superior to that of harriers. It has been maintained that those bred from the southern hound and the northern beagle, and of a middle size, are the best. The former dog is endowed with a much higher sense of smelling, and they can frequently run a scent an hour after the smaller beagle has given it up ; but this caution makes them sure of every step they take, requires a master as regular as themselves, and to the sportsman who wishes for a dashing gallop, their exactness renders them tedious and trifling : as they are able to hunt a cold scent, they are too apt to make it so, by their want of mettle and courage to push forward.

The north country beagle is nimble and vigorous ; he pursues the hare with impetuosity, gives her no time to double, and if the scent lies high will easily run down two brace during a forenoon.

Colonel Hardy had at one time ten or eleven couple of beagles, which were always carried to and from the field in a large pair of panniers, slung across a horse ; and, small as they were, they would keep a hare at all her shifts to escape them, and often worry her to death ; but it was similar to that species of hunting where a fox was hunted in Devonshire-House gardens : it might be endured as a novelty, but no one would ever wish to behold it a second time. A small barn was the allotted kennel of this pack, the door of which was one night broken open, and every hound, with the panniers, stolen, nor could the most diligent search discover the least trace of the robbers, or their booty.

The conquest of the hare does not alone depend on vigorous pursuit; there are many accidents to which the success of the field is obnoxious, and which, if the huntsman means to come off with credit, he should always recollect, and be prepared for it. It is not enough for him to choose his hounds properly, to raise their courage with wholesome food, and make them subject to control by discipline and exercise; he must also have presence of mind to observe the various stratagems of the animal he is in actual pursuit of; that every hare has her particular play, and that this is occasioned or changed according to the variation of the wind and weather, the weight of the air, the nature of the ground, and the degrees of velocity with which she is pursued; nor should he be unmindful of the numerous causes she may meet with to turn her out of her course, to quicken the speed, or to furnish her with opportunities for new devices. When most enraptured with the melody of the cry, and the expectation of success, he should also notice the alteration of the soil, the position of the wind, the speed with which she is driven, how far she is before, to what place she tends, whether likely to keep on forward, or to turn short behind; whether she has not been met by passengers, coursed by curs, intercepted by sheep; whether an approaching storm, a rising wind, a sudden gleam of the sun, the going off of a frost, the repetition of foiled ground, the decay of her own strength, has not abated or altered the scent.

There are other things worthy of remembrance, such as the particular quality of each hound; whether the present leaders are not apt to overrun the scent; which hounds are to be depended upon in a highway, on the ploughed ground, or a bare turf, or in an uncertain scent from the crossing of fresh game, the taint of sheep, or being long upon the foil. The strength of the hare will also make a difference; nor should the hounds be followed so closely, or be so loudly cherished when fresh, as after they begin to be fatigued and are run off their mettle.

It is advisable, when the scent lies well, that huntsmen should (especially if it be against the wind) keep themselves far behind, as it is impossible for the hare to hold forward, nor has she any mode of escaping but to stop short, and when all are past, to steal immediately back. This is often the occasion of an irrecoverable fault in the midst of the warmest sport, and is the best trick the hare has for her life in scenting weather. If the huntsman, therefore, is not too forward, he will have the advantage of seeing her manœuvre, and of assisting his hounds at this critical moment.

The chief protection which the hare possesses is her exquisite sense of hearing, and on this she mainly depends when flying from danger. The ears are so constructed, that they can be so turned as to render her exquisitely alive to any noise proceeding from behind, which enables her to avoid the throw of the greyhound, and when hunted, to continue her course until free from the clamour of the hounds. But for the perfection of this organ the hare might run herself blind, or until she died after she was out of danger, from the want of being conscious she was so. No sportsman can correctly assert, that a fresh hare started or coursed ever stops to turn her head to look back: how is she sensible, then, that she is clear from the enemy that pursues her? Her ears are her constant and unerring instructors.

We shall close our account of hunting by a laughable anecdote given by the late Mr. Beckford, descriptive of the riot which even beagles acquire by idleness. Having purchased a small pack of beagles in Derbyshire, he sent his coachman, the servant he could best spare, to fetch them. The journey was long, and Jehu not being much used to hounds, had some trouble in getting them along; and, to add to his difficulty, they had not been out of the kennel for some weeks before, and were so riotous that they ran everything they saw ; the chase of sheep, cur-dogs, and birds of all sorts, as well as hares and deer, had been his and their amusement all the way home ; however, only one dog was lost : and his answer to his master's question, of what he thought of the hounds, was appropriate enough, as he replied, " they could not fail being good hounds, for they would hunt *anything*."

Hare-hunting ends on the 27th day of February.

COURSING.

The pastime of coursing is of great antiquity, and seems to have been conducted in a similar manner to that practised at the present day. Arrian, an author who flourished A. D 150, wrote a treatise on the subject, and minutely described the sport. It was a practice among the most wealthy Gauls to employ men to find hares in their seats, and then return to their employers with tidings of the number they had found. These sportsmen mounted their horses, and, followed by their greyhounds, proceeded to course them ; and never more than a couple were slipped at a time, and these were not laid on too close to the hare, because, although possessing great swiftness, yet when first started, she is so frightened by the hallooing, and by the closeness and speed of the greyhounds, that it frequently so overcomes her with fear, that she is unable to maintain a lengthened course, and is killed without affording any diversion. Finding this to be the case, hares were allowed, by judicious sportsmen, to run some distance from their forms before the dogs were permitted to follow. Arrian says, the best hares were those found in open and exposed localites. These did not immediately try to avoid the danger by making the best of their way to woods and other sheltered situations, but whilst contending in swiftness with the greyhounds, quickened or moderated their speed according as they were pressed. If overmatched by the dogs, they endeavoured to gain ground by frequent turnings, which threw the dogs beyond them before they could turn, and then retreated with all speed to the covers for shelter. Zealous sportsmen, in those days, did not course for the sake of destroying hares, but for the love of seeing the contest between them and the dogs, and even felt a pleasure at the escape of the hare ; and having beaten the greyhounds, they never permitted the cover in which they sheltered to be disturbed, and as the horsemen closely followed the dogs, it was a common occurrence to take the hare which was yet alive from the greyhounds, and allow the animal to escape, that it might afford them sport on some future day. By way of encouragement, sportsmen used to speak to their dogs in the field; but only did so after the first course, as they were fearful of exciting them too much, and thereby making them exert themselves to their own destruction.

Those who did not employ hare-finders went out in company on horseback, and beat the grounds where hares were likely to be seated, as they went along; and when one was started a brace of greyhounds were slipped, and followed her. But such persons as were ardently attached to the sport went out on foot, and if accompanied by equestrians, it was their business to follow the dogs during the course. It is singular, that after the lapse of so many centuries, the same mode of beating for a hare in coursing should be practised as at that early period. The persons present were drawn up in a straight rank, whether horsemen or those on foot, and advanced at certain distances from each other, in a direct line to a given point, and wheeling round, that they might not go over precisely the same track, they beat the ground regularly back. The very same method is still pursued. A person was nominated to take command of the field, if there were many greyhounds out; he gave orders that such dogs should be slipped, according to the course which the hares might take, and these orders were strictly obeyed.

It was sometimes the practice of the Gauls to mix finders with their greyhounds, and while they were searching for a hare, the greyhounds were led at a short distance, and generally in the direction which the hare was most likely to take. This, however, was considered an irregular mode of coursing by true sportsmen, as the stoutest hares were so frightened by the cries of finders, that if they had not the advantage of a considerable start they were certain to be killed. In some parts of Great Britain, this method is still practised by such spurious sportsmen as consider no course worth looking at unless there is a hare at the end of it.

The greyhound, in ancient times, was considered as a very handsome present, and more especially by ladies, who looked upon it as a compliment of the most gratifying description. So far back as the time of King Canute, it was enacted by the Forest Laws, that no person under the degree of a gentleman should presume to keep a greyhound, that dog being regarded by the sovereign as a companion peculiarly suited to elevated rank. In the reign of King Charles the First greyhounds were held in very high estimation; and that monarch was devotedly attached to them, as well as to cockers.

The Isle of Dogs, now converted into the reservoir for West India shipping, derived its name from being the receptacle of the greyhounds and spaniels of Edward the Third; and this spot was selected from its contiguity to Waltham and other royal forests. That monarch frequently took up his residence at Greenwich during the sporting season, as being contiguous to a game country. In Britain, during the middle ages, coursing was confined to deer; and Queen Elizabeth, when not disposed to take a part in the chase, frequently occupied a station on a high ground to witness the sport. It is recorded that A.D. 1591, this queen spent the afternoon of a day in seeing deer-coursing, from a high turret at Cowdrey Park, the seat of Lord Montacute, from whence she saw sixteen bucks (all having fair law given to them) pulled down by greyhounds. From the predilection this princess had for coursing, it attained a high degree of fashion and celebrity during her reign; and certain laws, drawn up at her suggestion by the Duke of Norfolk, were established by her, and generally acceded to by the principal nobility and gentry of the time who were addicted to the amusement. These laws are the basis of all the regulations which have since been adopted in coursing; and are still resorted to in cases where judgment is to be given, and a decision required. It was the province of the *feuterer*, who let loose the greyhounds, to receive those that were matched together into a leash so soon as they came into the field, and to follow close upon the *hare-finder*, or him that was to start the hare, until he came to the form; and no horseman, or any one on foot, was allowed to go before, or on either side, but immediately behind, and at not less than forty yards' distance.

The following are the different heads of this law:—

1. No hare to be coursed with more than a brace of greyhounds.

2. The hare-finder to give three *sohos* before he put her from her form, that the dogs might have notice to attend to her being started.

3. The hare to have law of twelve score yards before the greyhounds were loosed, unless the small distance between the hare and the covert would not admit it without danger of immediately losing her.

4. The dog that gave the first turn won, if, during the course, there was neither cote, slip, nor winch.

5. A cote is when a greyhound goes endways by his fellow and gives the hare a turn.

6. A cote served for two turns, and two trippings or jerkins for a cote: if the hare did not turn quite about, she only wrenched, and two wrenches stand for a turn.

7. If there were no cotes given between a brace of greyhounds, but that one of them served the other at turning, then he that gave the hare most turns won; and if one gave as many turns as the other, then he that bore the hare won.

8. If one dog gave the first turn, and the other bore the hare, he that bore the hare won.

9. A go-by, or bearing the hare, was equivalent to two turns.

10. If neither dog turned the hare, he that led the last to the covert won.

11. If the dog that turned the hare served himself and turned her again, it was as much as a cote, for a cote was esteemed two turns.

12. If all the course was equal, the dog that bore the hare won: if the hare was not borne, the course was adjudged dead; that is, undecided.

13. If a dog fell in a course, and yet performed his part, he might challenge the advantage of a turn more than he gave.

14. If a dog turned the hare, served himself, and gave divers cotes, and yet in the end stood still in the field, the other dog, if he ran home to the covert, although he gave no turn, was adjudged the winner.

15. If by accident a dog was run over in a course, the course was void, and he that did the mischief was to make reparation for the damage.

16. If a dog gave the first and last turn, and there was no other advantage between them, he that gave the odd turn won.

17. He that came in first at the death, took up the hare, saved her from being torn, cherished the dogs, and cleansed their mouths from the fleek, was allowed to take the hare for his trouble.

18. Those that were appointed judges of the course were to give their decision before they departed from the field.

How very different this species of amusement is in Tartary in the rules laid down for it! It is a very favourite amusement with that people, who, contrary to our practice, take out for this purpose as many dogs as they can muster, and ensure the destruction of the poor hare by surrounding and besetting her on all sides, like some ferocious animal, until she is hunted by one greyhound into the mouth of another. As soon as they have picked up the prize, they immediately cut its throat, as they are forbidden to eat "flesh with the blood thereof." The hares of the Crimea are very large, generally weighing nine or ten, and often thirteen or fourteen pounds.

In more recent times, deer, foxes, and hares have severally been coursed with greyhounds, according to the fashion or taste of the age; and it has always continued a sport of high estimation with various eminent and opulent individuals in every part of the kingdom. But coursing is now exclusively confined to hares. For some time this sport suffered a temporary suspension, from which, however, it emerged, with renovated ardour; and many clubs have been established for the encouragement of it in almost all parts of the country. It owes its present popularity to the Earl of Orford, who, in the year 1776, instituted the celebrated Swaffham Coursing Society. The number of members is confined to the number of letters in the alphabet, and each member's dogs are named with the initial letter he bears in the club. When a member dies, or wishes to retire, his place is, by the rules of the society, always filled up by ballot. Upon the decease of their worthy founder, the members of the club agreed to purchase a silver cup, of the value of twenty-five guineas, to be run for annually; and it was at first intended to pass the cup, like the whip at Newmarket; but it was afterwards determined that a new cup should be purchased by the society, and to be contended for in November every year; conceiving that such an alteration would best diffuse that respect they were anxious to show to the memory of their founder, by gracing the sideboard of the different winners in various parts of the kingdom.

As the rules of this society are so good, we give them as a model for others; and these are always strictly adhered to at their meetings:—

"1. Every member to pay annually in November one guinea to the treasurer, to defray the expenses of the society; and half a guinea in February, as a fund for purchasing the cup to be run for in November following.

"2. If any member absents himself for two meetings, without sending what shall be judged a sufficient excuse by a majority of not less than thirteen of the members, he shall be deemed out of the society, and another chosen in his place.

"3. Every vacancy to be filled up by ballot, and three black balls to exclude. Thirteen members to make a ballot; the names of the candidates must be hung up in the dining-room three days preceding.

"4. No stranger to be admitted into the society's room, unless introduced by a member, who is to put down the stranger's name on a paper, which is every day to be hung up in the dining-room; and no member to introduce above one friend.

"5. Every member who attends a meeting shall produce and match one greyhound, or forfeit one guinea to the treasurer, to be disposed of as a majority of this society shall think proper.

"6. The stewards are to be named each night for the succeeding day by the stewards of the day.

"7. The stewards are to appoint each an assistant member in the field, to regulate the number of beaters, situation of the company and servants, to determine what part of the field to beat, and to preside at dinner. Each steward and his assistant is to wear a cockade of his own colour.

"8. The owners of the dogs matched are to nominate one or more judges, who are to decide all courses, whether long or short; provided there be an evident superiority in favour of one of the dogs.

"9. Any member may put up to auction the dog of a member, who (notice being given) must be present, and has the liberty of bidding once.

"10. All future meetings to be held on the second Monday in November, and on the first Monday in February, unless prevented by frost and snow, in which case all matches made previous to such meetings are off; and the meetings shall be held the first open Monday in or after November, and the first open Monday in February, and not later."

The rules of the Wiltshire coursing clubs, as far as relates to the greyhounds in the field, are, that the dog that has the most of the course is the winner, whether he is the dog that kills the hare or not, and that if a dog stops in any part of the course, and does not run home, it is always decided against him. The dogs are now loosed from slips of a better construction than those formerly in use, so that it is impossible for either dog to have the least advantage given to him at starting.

With respect to the swiftness of the greyhound, the following questions were submitted to a gentleman whose greyhounds are known to be as swift as any in the kingdom. Whether the speed of a greyhound is equal to that of a first-rate race-horse for the distance of a mile, or for a greater or lesser distance ? and whether the speed of any hare (supposing the dog and hare to be started without the law usually allowed to a hare in coursing) is equal to that of the greyhound ; and to what distance, within that of a mile, the hare could exert that superiority of speed, supposing the hare to be the swiftest animal of the two ? His opinion was, that upon a flat a first-rate horse would be superior to the greyhound ; but in a hilly country, as in Wiltshire, a good greyhound would have the advantage : on the second point, that although he had seen many hares go away from greyhounds, laid close in with them, without a turn, yet he believes a capital greyhound (so laid in) would not suffer a hare to run from him without turning her. An incident, however, occurred in December, 1800, which brought the speed of the greyhound and race-horse in competition. A match was to have been run over Doncaster course for one hundred guineas, but one of the horses having been drawn, a mare started alone to make good the bet, and after having gone the distance of about a mile, a greyhound bitch started from the side of the course, and ran her other three miles, keeping head to head, which produced a singular race ; and when they arrived at the distance-post, five to four was bet on the greyhound ; when they came to the stand it was even betting. The mare won by about a head.

In February, 1800, a brace of greyhounds in Lincolnshire ran a hare a distance, measuring straight from her seat to where killed, upwards of four miles in twelve minutes ; during the course there was a great number of turns, which very considerably increased the space gone over ; the hare ran herself dead before the greyhounds touched her: this extensive course, in so short a time, is a strong proof of the strength and swiftness of the hare. Horses have been as much distressed in keeping up for their riders to see a course as in much longer chases with hounds. A hare was found close to the town of Bottisham, in Cambridgeshire, and which took away for the Six-mile Bottom; twenty-two horses started, but only one could make a gallop at the conclusion of the course: the hare (which was within fifty paces of the cover) was dead some yards before the greyhounds, who were obliged to be bled to recover them.

THE HARE.

The hare is so well known that a specific description of it is unnecessary; we shall merely show that Nature, ever bountiful to her creatures, has, to this defenceless animal, been largely so. Its ears are so constructed that they convey the most minute sounds, and warn her from the distant danger. Under pursuit, the hare reaps but little benefit from her ears sideways or straight before, and her chief excellency in hearing arises from her sensibility to hounds from behind. This is the perfection and primary cause to which her preservation is owing, the faculty of running being only a secondary quality; but to perform which function, her legs are remarkably muscular, especially the hinder, which are also very long; their length giving the hare that singular superiority over her pursuers in ascending steep places, and so sensible is the animal of this as always to make towards the rising ground when started. The eyes of the hare are so situated as to enable her, when at rest on her form, to observe without difficulty, and almost without motion of the head, a whole circle; they are so protuberant that the lids are too short to cover them when asleep. She moves her nostrils frequently when sleeping, and often whilst awake. She then also winks her eyelids; and yet the hare, when running, from various incidents that have occurred, seems to use her sight (which, from the form and situation of the eye, is admirably calculated to espy impending danger from every quarter) imperfectly forwards, and to direct it chiefly towards her pursuers, so much so as to endanger her safety. As an instance: in Sandpit wood, in the parish of Terling, in Essex, a pack of fox-hounds had just unkennelled, and the hares, of which, as well as of foxes, there were plenty in the cover, were many of them disturbed. In one of the paths a hare met and ran against a terrier, who was hastening to the cry, with such velocity, that both animals were apparently killed; the dog with some difficulty was recovered, but the hare's skull was fractured to pieces.

Dogs and foxes pursue the hare by instinct. Wild-cats, weasels, foumarts, and martins, catch and destroy it. Eagles, and other birds of prey, pounce upon it in its form, and man makes it an animal of the chase.

> "Poor is the triumph o'er the timid hare!
> Yet vain her best precaution, though she sits
> Conceal'd, with folded ears, unsleeping eyes,
> By Nature raised to take th' horizon in,
> And head conceal'd betwixt her hairy feet,
> In act to spring away. The scented dew
> Betrays her early labyrinth; and deep
> In scatter'd sullen openings, far behind,
> With every breeze, she hears the coming storm.
> But nearer and more frequent, as it loads
> The sighing gale, she springs amazed, and all
> The savage soul of game is up at once."

The hare possesses the sense of smelling in a degree of high perfection; though the poacher takes his stand with every caution, and let the hare approach with all boldness towards the spot, the instant she winds him, another track is immediately taken. Her near approach to the colour of the ground hides the hare from the sight of its enemies—man, birds, and beasts of prey. In northern countries, Pro vidence, careful to preserve every species of animal, causes the fur of the hare, as well as of many others, to become white in winter, which renders them less conspicuous in snow.

It is not generally known that the Irish, English, and Scotch mountain hare, are of different species, and are easily recognisable from each other. They also vary considerably in point of size. The smallest of the British hares are those of the Island of Ilay, and the largest are found in the Isle of Man, some of which have weighed twelve pounds. They are sometimes met with in England from ten to eleven; but the general weight is from seven to eight pounds and a half.

The hare does not pair, but pursues the female by its sense of smelling; they breed during the whole year, except about two months or ten weeks in the depth of winter. The female goes with young one month, usually has two, sometimes three, and very rarely four; but in the spring of 1799, in the orchard of W. Cole, of Hellens, Bumpstead, in Essex, seven young hares were found in one form; each was marked with a star of white on its forehead. It is a prevailing opinion, that this mark always exists when the young exceed two in number. The mother suckles the young about twenty days, after which they separate and procure their own food, making a form or seat sixty or eighty paces from each other; so that when we meet with one young hare we are almost certain of finding more within a small distance. To prove the fecundity of the hare, a brace of hares (the doe pregnant when shut up) were inclosed in a large walled garden, and proper plants supplied for their sustenance. At the expiration of twelve months the garden was examined, and the produce was fifty-seven hares, including the original parents.

The breast of the hare is narrow, and at the same time the chest is most capacious. During the time of its being hunted, the lungs are in a continual state of violent expansion, and by the frequent inspiration and expiration become in the end so vastly distended, as to require a much larger space than is assigned for the purpose; the chest, therefore, is fashioned to receive more breath, or give the lungs more room to perform that office, than any other creature.

The hare lives to six or seven years, and comes to maturity in less than one: the young are known by the easy breaking of the under jaw-bone; and the same process will determine the age of rabbits. The young are also distinguished by feeling the knee-joints of the fore-legs: when the heads of the two bones which form the joints are so continuous that little or no space is to be perceived between them, the hare is old; on the contrary, should there be a perceptible separation between the two bones, the animal is young; and is more or less so, as the two bones are more or less separated. The cleft in the lips spreading very much, and the claws being blunt and ragged, and the ears dry and tough, are likewise signs of age. On the contrary, when the ears tear easily, the cleft of the lip is narrow, and the claws are smooth and sharp, the hare is young. The body will be stiff and the flesh of a pale colour when newly killed; if limber, and the flesh turning dark, it is stale.

PHEASANT-SHOOTING.

Springers and cockers are the best dogs for pheasant-shooting, their small size enabling them to find their way through thick covers and brushwood, where it would be impossible for setters or pointers to penetrate. But where these dogs are not kept, the setter will be found the most useful, as the hairy feet of this dog enable it to withstand the effects of brambles and thorns better. When, however, cockers and springers are used for this sport, they are sometimes trained to range with silence.

Some sportsmen deem no springers so good as two or three fellows with long staves, and who only wish to shoot when the game is so abundant that scarcely a bush can be struck but a bird is seen ; to them, pigeons thrown up from a trap, rabbits started from a basket, or swallows skimming along a horse-pond, are alike objects of diversion, if a certain number of shots can be obtained without any fatigue, and a certain quantum of guineas be depending upon each discharge. Shooters equipped with only these human mongrels can neither feel the ardour nor the expectation which gives spirit to the amusement, and which the mettled hunting of the springer or cocker so exceedingly enlivens. We cannot better express what we would say on that point than in the words of the poet :—

> " See how with emulative zeal they strive,
> Thread the loose sedge, and through the thicket drive!
> No babbling voice the bosom falsely warms,
> Or swells the panting heart with false alarms,
> Till all at once their coral tongues proclaim
> The secret refuge of the lurking game.
> Swift is their course, no lengthen'd warnings now
> Space to collect their scatter'd thoughts allow,
> No wary pointer shows with cautious eyes
> Where from his russet couch the bird shall rise:
> Perhaps, light running o'er the mossy ground,
> His devious steps your sanguine hopes confound.
> Or, by the tangled branches hid from sight,
> Sudden he tries his unexpected flight.

Soon as the ready dogs their quarry spring,
And swift he spreads his variegated wing,
Ceas'd is their cry, with silent look they wait
Till the loud gun decides the event of fate:
Nor, if the shots are thrown with erring aim,
And proudly soars away the unwounded game,
Will the stanch train pursue him as he flies
With useless speed, and unavailing cries."

There are no fixed rules for beating covers; this, however, ought to be a standard regulation, never to beat in a slovenly manner. Make all the ground good, it will save time, and frequently produces the object of pursuit; a nide of pheasants sometimes are collected in a narrow compass, and in the middle of the day conceal themselves very close: recollect, after the morning's scent is evaporated, it is then the spaniel's nose and the shooter's perseverance are called into their fullest exertion. In the early part of the season pheasants prefer grassy, brambly, two or three years' old slops; and it is lost labour to try higher growths: as the season advances, they lie in clearer bottoms, especially near pits of water, which are sometimes found in woods: in winter, skirting the edges, and afterward by degrees sinking deeper into the covers, is, perhaps, where the game is not very plentiful, as good a mode as any; the haunt of the game that have been feeding in the adjoining fields will thus probably be hit off, and it may at least serve to show whether there is game in the covert. If the springers are wide rangers, after traversing the wood well, always make a concluding circuit round the edges of it, depend upon getting shots by this means at the birds, which may have run or flown thither from the interior parts. They are fond of alder-trees, which grow by the sides of pits.

When parties go shooting pheasants, should it have rained the previous night, the birds will generally be found to have resorted to hedge-rows and furze-covers, to avoid the droppings of the trees. In these situations, therefore, good sport may be expected. When a pheasant is found by a setter, instead of flying to a distance, it will frequently perch upon an adjoining tree, and challenge, (that is, make a chuckling noise,) which they seldom do when started by a springer or cocker.

It is always found that pheasants lie well in hedge-rows; and in the absence of springers, setters or pointers will answer equally well, as it frequently becomes necessary to shake the bush before the birds will rise. When birds are sprung, what is to be done is fully and clearly expressed by the poet Pye:—

> " No open view along th' encumber'd field
> To the cool aim will time and distance yield;
> But the nice circumstance will oft demand
> The quickest eyesight and the readiest hand,
> Swift as he rises from the thorny brake,
> With instant glance the fleeting mark to take,
> And with prompt aim the transient moment seize
> 'Mid the dim gloom of intervening trees.
> His gaudy plumage when the male displays
> In bright luxuriance to the solar rays,
> Arrest with hasty shot his whirring speed,
> And see unblamed the shining victim bleed
> But when the hen to thy discerning view
> Her sober pinions spreads of duskier hue,
> The attendant keeper's prudent warning hear,
> And spare the offspring of the future year;
> Else shall the fine which custom laid of old
> Avenge her slaughter by the forfeit gold."

This last line refers to a custom which, Mr. Bingley justly observes, " that, like the laws of the Medes and Persians, should never be altered, nor ever suffered to be evaded: it preserves the future stock of game, and is a needful check to occasional near-sighted, or wilfully ignorant gentlemen. Of this I have seen numberless instances, and it is astonishing how quickly the vision is cleared, when an error is sure to cost a guinea. An Italian prince was, by a much esteemed friend of mine, requested to be shown a day's pheasant-shooting: it was hinted to the prince's companion, that the hen pheasants were not to be molested. However, the prince fired away at all the pheasants that presented themselves, and with great success at the unfortunate females; of course, no penalty could be exacted from a foreign gentleman, and the only satisfaction was, that his highness, in the keenness of his pursuit, left the greater part of his breeches and stockings (which were both silk) in the coverts, and was obliged to be bandaged up with handkerchiefs, with his legs and thighs in a very lacerated state, to make even a decent appearance!"

Should the woods be very extensive, when steady from hares, the cockers and springing spaniels cannot well be too numerous, but if given to hunt hares, they disturb the pheasants, who merely fly up and perch upon the low boughs, and the ground of the covert is in vain traversed and beat for birds, that are already some yards above it. In short, a springer that follows a hare further than whilst in view, is never worth keeping. Other circumstances to be minded, are, that when a springer is once put into a covert he is never to quit it to range in the fields, which some slippery ones will do, whilst their owners are beating within it. An indispensable qualification in a cocker or springer is to know their names, and come when they are called. When a springer owns a haunt, and quests freely, there should be no disappointment. Whenever the notes are doubled, their master should be certain there is game, and accordingly press forward: much depends upon the practice which springers have; the constant use and the killing of game to them is as essential to the steadiness of a high-mettled springer, as to a high-bred foxhound, neither can be worked too hard if kept well in blood. Upon no account accept or keep a springer or cocker which has any taint of the hound in his pedigree, although for generations back, as they will be sure to hunt hares in preference to winged game, and the stock may be crossed everlastingly, may attain beauty, strength, symmetry; yet this latent spark of the harrier may never be extinguished, and they will always show their predilection for hares, whenever they have opportunity; and this generally happens when their goodnesses are most required, namely, in coverts where the winged game is preserved, and there, for the most part, hares are always in the greatest plenty. A stronger instance could not be adduced than in the springers of Lord Waltham and Mr. Hoare, about fifty years ago. A road only parted the seats of these two gentlemen, and their gamekeepers frequently shot in the woods together. The dogs were equally handsome; but those of the former would drive hares the day through, and consequently spring everything that accidentally lay in the way of their course, whilst those of the latter no more ran hares than they did sheep; they would, indeed, find the hares, but follow no further than they saw them: they were always in their places, twisting around every stub with much agility, and possessed such fineness of nose, that neither woodcock nor pheasant could escape their search. Lord Waltham's springer bitches had originally a cross of the beagle, and although this was tried to be remedied by resorting to the best dogs, the tendency to hare-hunting could never be subdued.

In this sport it is necessary to be provided with strong gaiters, made of woollen cloth or leather, to guard the limbs against the pricks of thorns, to which sportsmen are very liable in thick coverts.

Pheasant-shooting commences on the tenth day of October, and ends on the first of February.

This beautiful bird, now so commonly diffused throughout Great Britain and Ireland, and which breeds with such facility either in a wild or domesticated condition, was originally introduced from the banks of the Phasis, a river of Colchis, in Asia Minor. It is said that this bird was brought by Jason, when he made his celebrated expedition to Phasis, and hence the etymology of the word, which was, in consequence, called *phasianus* by the Latins, and translated *pheasant* in our language, *fasian* in French, and *fasiano* in Italian.

The pheasant is now to be met with in Britain from Land's End to John-o'-Groat's House, and although it has been for such a length of time a naturalized inhabitant of this country, the cause of its preservation must be referred not so much to the wildness of its disposition as to the care and expense bestowed to that end by noblemen and other extensive landed proprietors, without which the breed would in all probability have been long since extinct. Independently of its beauty, as an object of idle acquisition, the high estimation it bears at the tables of the wealthy and luxurious, proves too tempting an inducement for the poacher, whose facilities of capture are greatly increased by the peculiar habits of the bird.

Woods that are thick at the bottom, with long grass, sustained by brambles and bushes, thick plantations, or marshy islands, and moist grounds overgrown with rushes, reeds, or osiers, are the favourite resorts of pheasants. Where these do not exist, thick hedge-rows are chosen by them, but however well they are protected and encouraged, they will never be induced to remain where these are wanting. Wood and water are indispensable to the pheasant. In these situations this bird lies concealed during the day, and its time of feeding in the adjoining fields commences at dawn: and also before retiring to rest, about sunset. It seldom flies to these feeding haunts, but runs to them, and hence the ease with which they are snared by poachers, who set wire-snares in the narrow paths that the birds make through the long grass, as they invariably go and return by the same route. Its habit of roosting on trees is still more fatal to this bird, since, from being an object of considerable size, readily to be distinguished also by its long tail, and at the same time not easily frightened from its perch, it offers a sure mark during moonlight nights to the gun of the poacher; and it is chiefly from this mode of destruction that such incredible numbers are sent to the London markets, in defiance of the enactments of the game-laws.

The short crow of the males may be heard in March, and being polygamous, they take possession of certain beats, and, each maintaining his own chosen resort, drives all other males from it, in contesting for which severe battles ensue. In this, his chosen resort, each bird commences crowing, accompanied by a peculiar clapping of the wings, and which answers as the note of invitation to the other sex as well as of defiance to his own.

The female makes a rude nest upon the ground, in which she deposits from ten to fourteen eggs, of a clear olive-green colour. The young are hatched during the months of June and July, and continue under the protection of the female parent until their first moult, and assume the adult plumage, which, commencing about the beginning of September, is perfected by the middle of the following month, and after this period the young males are only to be distinguished from the older birds by the comparative shortness and bluntness of the tarsal spur.

The principal food of the pheasant, in the winter months, is grain and seeds, but in spring and summer it lives more upon roots and insects. Selby observed that the root of the bulbous crowfoot, a common but acrid meadow-plant, is a particular favourite with this bird, and forms a great portion of its food during the months of May and June. The root of the garden tulip is also an article of diet, which it omits no opportunity of obtaining, and which by means of its bill and feet it speedily reaches, however deeply planted.

Mr. Yarrell says :—" A history of our pheasant would be incomplete if left without any notice of that remarkable assumption of plumage resembling the male observed to take place in some of the females, which is well known to sportsmen and gamekeepers, by whom such birds are usually called Mule Pheasants. The name is correct, since some of our dictionaries show that the term " mule" is derived from a word which signifies barren, and that hen pheasants are incapable of producing eggs, from a derangement of the generative organs, sometimes an original internal defect, sometimes from subsequent disease, and sometimes from old age. The disorganization is marked by the appearance of a dark lead colour, pervading the ovarium, situated on the middle line, and between the two kidneys, which dark colour is seen in patches on various parts of the oviduct below ; and I have never examined a hen pheasant, assuming the plumage of the male, without finding more or less of the appearance mentioned." The writer examined a young female, which was assuming the male plumage, and found that it was entirely divested of the ovarium, consequently it was one of those born barren ; otherwise, the bird was in perfect health. That specimen is now in the museum of the Manchester Natural History Society, where there are several of these in more perfect male plumage. These *lusus naturæ* will at once be distinguished from male birds by their wanting the red naked skin about the eyes.

The pheasant has an inclination to breed with other species of the gallinaceous birds. The late Rev. Gilbert White, of Selbourne, described and figured a bird in the "Naturalist's Calender," killed in Hampshire, which he considered a hybrid between the pheasant and domestic fowl.

The ordinary weight of the pheasant is about two pounds and a half; but in some localities, where they are well fed and not molested, they grow to a much greater weight. Mr. Fisher, a poulterer in Duke-street, St. James's, London, in January, 1839, exhibited a pheasant which weighed four pounds and a quarter. In the fifteenth volume of the "Linnæan Transactions" mention is made, that at Campsey Ash, where the pheasants are well fed with potatoes, buckwheat, and barley, a cock pheasant has been killed which weighed four pounds and a half; and Mr. Louis Jaquier, formerly of the Clarendon, produced a brace of cock pheasants which weighed together about nine pounds. The lighter bird of the two just turned the scale against four pounds and a half; the other bird took the scale down at once.

GROUSE-SHOOTING.

Of all kinds of shooting this is decidedly the best, and most desired by the true sportsman. It is one requiring considerable exertion, and in many instances fatiguing; and nowhere is it of such high interest as in Scotland, among those secluded glens and sloping heather-clad moors, which are embosomed in the high mountain ranges, for which that country is so remarkable.

The most appropriate dress for this sport is a light shooting-jacket, breeches, long leather-leggings, and stout shoes, all highly essential for wading through the thick heath with which these moors are clad. Either a flannel or cotton jacket should be worn next the skin, to guard against taking cold when overheated; and either of which are much more agreeable than a wet and cold linen shirt adhering to the skin. Some prefer trousers, with short laced boots, which are more easy to the limbs than long ones. But care should be taken that the soles are strong, as the best means of preventing blistered feet. A flask of brandy or whiskey is a necessary appendage to a shooting excursion. The flask should have a drinking-cup attached to its bottom, as no sportsman should ever drink cold water without its being qualified with a portion of ardent spirits. But where this has either been forgotten or otherwise, when thirst compels the sportsman to have recourse to cold water, he should take care to keep up the heat by exercise, otherwise the most dangerous consequences may follow. He should likewise be cautious not to drink cold water at the end of his day's sport, until his body is sufficiently cooled down, that is, nearly to its ordinary temperature.

Aged and feeble sportsmen were accustomed to have trained ponies and galloways, which would stand still, with the reins laid over their necks, and permit their masters to take aim and shoot from their backs. The sport, however, cannot be enjoyed in full perfection but in walking. Where the moors are distant from the sleeping quarters, it is undoubtedly proper to ride to and from the starting-point, to begin the day's work (severe enough of itself) quite fresh: and it is but right to indulge oneself after a day of laborious amusement.

The sportsman who goes out every day ought to have three brace of dogs, only using, however, a couple at a time; and by employing different dogs in the morning and afternoon, they will be kept fresher for work.

It is of much importance for the sportsman to study the prospect of atmospheric changes. Before going out he should notice the state of the barometer, and be guided by it in his choice of ground, and ensure better sport. When there is a prospect of rain, birds generally resort to midway situations on hills, and during bad weather the buts of mountains are chosen by them, and in fine weather they are found nearer to the mountain tops. Grouse generally go to water the first thing after their morning flight; and this is the proper time for commencing the day's sport, from which time until mid-day, the sport will be best; after which the time will be best spent in taking rest and luncheon. From twelve to three grouse generally shelter under thick places of the heath, or in hollow retreats, from the heat of the sun. Shooting may be recommenced about three o'clock, and from that time to sunset good sport may be expected.

The most sheltered sides of mountains are the situations most likely to find game, taking care always to give dogs the advantage of the wind. If it blow hard, grouse resort to where the heath is thickest and longest; and when disturbed generally take long flights, and for the most part down the wind, that is, not against it. In this, grouse differ from all other game-birds. However, if the wind is very high, good sport is seldom to be expected, and it is, besides, difficult to take a steady aim.

In grouse-shooting the setters are preferable to the pointers, as their feet are protected by long hair, which prevents them being cut by the ling in dry weather; they are, besides, higher mettled, and range with more courage. The chief objection to their use is, that they require such plenty of water, and without which their speed and steadiness are frequently called in question. Upon the moors, however, there is seldom a want of water, and they there undoubtedly show themselves superior to the pointer.

On finding a pack of grouse the old cock is generally the first to make his appearance, as also to take wing. Unless hard pressed he will run for some distance before the dogs, uttering a chuckling cry, and in some instances rise and challenge without any immediate cause, which is a signal for the female and poults to escape by running and separating themselves in all directions. When the dog points or stands, should the grouse erect their heads and run, it is a sign that, either from wet or some other cause, they will not lie well that day, and consequently the sportsman has little chance of getting a shot, unless he runs and heads them. But, unless dogs are thoroughly well broken in, this is apt to spoil the dogs, and even lead to disappointment, as, seeing their masters run, they run also, and frequently take the lead and flush the game. When dogs overtake, and seize their game, they ought to be properly corrected for it, as, if permitted to do so, they will never be worth anything in the field. However, too harsh treatment must not be exercised, as it is apt to *blink* the dog; that is, to render him so timid, afterwards, that he may refrain from setting game.

Sportsmen frequently wish to transport grouse to a distance, and in hot weather it is difficult to prevent them from becoming putrid. Before packing, they should be rendered quite dry, and then placed in a partitioned box, each bird being kept separate, and to prevent shaking, clean hay or heath placed around them. We recommend the following method, which is unquestionably the best:—" Never draw your game, particularly grouse; that is, do not follow the usual directions of taking out the entrails, when you wish to send them any distance. The best mode is not to pack them until they are perfectly dry.

First of all procure bladders, and put a brace or more in one, if the bladder will contain them; tie the bladder tight round the neck, and seal it with sealing-wax, to prevent the air getting in; and in this state, if put into boxes, they will keep for three weeks if required." If the sportsman has not provided himself with these before going to the moors, the next best thing is to wrap the birds firmly up in paper and place some heath in the bottom of the packing-box.

Grouse-shooting commences on the twelfth day of August and ends the tenth day of December.

This fine bird is exclusively British, as hitherto it has never been found in any other country. It was originally only an inhabitant of Scotland, but has now found its way into several of the higher districts of England and Wales, but not extending further south than Wales and Yorkshire.

Grouse never resort to woods, but confine themselves wholly to the open moors. They are monogamous, pairing every spring, and this at a very early period, usually during the month of January, but in mild seasons even previous to that time, making their nests of a few withered stems of heath or grass, placed carelessly together in a tuft of heath. The female lays from eight to fourteen eggs, commencing in March or April, according to the warmth of the season. The eggs are of a greyish-white, blotched with umber-brown. The office of incubation is performed by the female; the male bird, however, remaining in the immediate neighbourhood of the nest, and joining the brood; after which he is as assiduous in his attention to them as the female. They continue together until the following spring, at which time, by the great law of nature, they separate into pairs. In localities where they are very numerous, they often congregate into large packs, during the latter part of autumn, and continue so through the winter; and when thus associated become very wild, not easily to be approached by the gun within killing distance. The food of grouse consists of the tender tops of heaths, the fruit of the cranberry, trailing arbutus, and crowberry; and where arable land lies near their haunts they will resort thither and feed upon grain. In the Highlands of Scotland, during the months of August and September, the slaughter of the red grouse is immense; but the great care bestowed upon their protection through the rest of the year, and the comparatively small number requisite to replace the stock, owing to the numerous broods derived from each pair, is at present a sufficient guarantee against the final extinction of a species which is the peculiar property of our islands, and which should be most carefully protected and continued.

In 1801, a gentleman in Inverness-shire shot about fifty-two brace of grouse in one day, never killing a bird sitting, or more than one bird at a shot. At the first of the season the young birds lie close, particularly where the heath is high and strong, affording excellent sport after a favourable breeding time; but as the season advances the birds get strong, and from being disturbed become wild, and the families uniting to form packs are then very difficult to get shots at.

The grouse varies in weight from fifteen to twenty-four ounces. Four males taken at random from a number killed in Morayshire weighed—two, twenty-four ounces and three quarters, one, twenty-four and a half, and the fourth, twenty-four ounces; and two females—one weighed twenty-four and a quarter ounces, and the other twenty-three and a quarter ounces. In Yorkshire grouse are generally darker, and smaller than in Scotland; and yet Pennant mentions that he heard of one being killed in Yorkshire which weighed twenty-nine ounces.

PTARMIGAN-SHOOTING.

Ptarmigans are extinct in England and Wales, and are comparatively thinly scattered in Scotland, where they chiefly inhabit the tops of lofty mountain ranges in the Highlands. They inhabit Ben-more, Ben-lawers, as well as the Hebrides and the Orkneys. They locate on the very summits of rock, sitting on grey stones, during summer, from which they can scarcely be distinguished, from the similarity of their colour. They seldom take long flights; but when disturbed, make a small circuit, and alight. They are by no means so shy as the common grouse. In winter they are found sitting upon the snow, and are hardly to be distinguished, from their immaculate whiteness. Mr. Daniel mentions a circumstance of a friend of his killing forty-three ptarmigans in one day above Loch Laggan, which lies between Dalwinnie and Fort Augustus. Dogs are of little use in ptarmigan-shooting, after they have taken to the higher summits. It is only when their resort is in the high mountain glens that dogs can be used. The flesh of this bird strongly resembles in flavour that of the grouse; indeed, it is hardly possible to distinguish the difference.

The ptarmigan is a very local species in Britain, being confined to the loftiest mountain ranges of the North, extending as far west as the Hebrides, and north to the Orkneys, and has been seen sparingly in Scotland. It would seem that the name of this bird is derived from the Gaelic language, from the word *tarmachan*.

These birds pair early in spring, and the female deposits from ten to fifteen dirty-white eggs, spotted and blotched with rufous-brown, something larger than those of a partridge. The brood not only continue together until the succeeding spring; but in winter several families associate, forming small flocks, and at this season they burrow in the snow, under which they find a warm and secure habitation, and are thus enabled, by pursuing the surface of the earth, to obtain a sufficient supply of food during our most severe winters. Alpine berries, such as the bloodberry, crawort, and cranberry, with seeds, &c. form their food. The average weight of the ptarmigan is seventeen to twenty ounces, although instances have occurred where they were somewhat heavier.

BLACK-COCK-SHOOTING.

This sport is so similar to grouse-shooting, that any particular observations are hardly necessary ; we must, however, only remark, that, as the black-cock is more arboreal in its habits, he is to be found in somewhat different localities, and these are more wooded. It is no uncommon occurrence, also, to see a number of them ranged on the top of a wall, which may happen to be on a moor, and in such cases resemble and have been frequently mistaken for so many crows. They are not so shy as the red-grouse.

The black-cock is more a forester than even the pheasant, scorning all connexion with man, and very rarely tasting the dainties of the stubble : the wild forest is his chief delight; and where it is open, in preference to its woody scenes. It was formerly much more abundant in New Forest, and has the honour, which no other bird can boast, of being protected as Royal game. When the chief-justice in Eyre grants his warrant to kill game in the Forest, he always excepts the black-cock together with the red and fallow deer.

The black-cock has now become very scarce in the south of England, inhabiting but a few particularly wild localities. It is, however, more plentiful in the north, and from Northumberland to the northern parts of Scotland this bird prevails, especially where well wooded, and mountainous districts afford shelter and food. They are also met with in the islands of Sky and Mull, but not on the Shetland and Orkney Islands.

The bases of hills in heathy and mountainous districts, which are covered with a natural growth of birch, alder, and willow, and intersected by morasses, clothed with long and coarse herbage, as well as the deep and wooded glens so frequently occurring in the extensive Highland wastes, are the favourite resorts of this noble bird, and most favourable to its increase. During the first months of autumn and winter the males associate, and live in flocks, but separate in March and April; and, being polygamous, each individual chooses some particular station, from whence he drives all intruders, and for the possession of which, when they are numerous, desperate contests often take place. At this station he continues, every morning and evening during the pairing season, repeating his call of invitation to the other sex, and displaying a variety of attitudes, not unlike those of a turkey-cock, accompanied by a crowing note, and by another similar to the noise made by the whetting of a scythe. At this season the plumage exhibits the richest glossy aspect, displaying the iridescent play of metallic greens, blues, purples and black, surpassing the richest satin, and the red skin of his eyebrows assumes an intensely livid colour. With the cause that urged their temporary separation their animosity ceases, and the male birds again associate, and live harmoniously together.

The male bird is entirely black, except the tops of the secondary quills, which are tipped with white, and the under tail coverts, which are pure white. The female is entirely different in colours, and smaller in size. The head and neck, ochreous yellow, rayed with black; the upper parts, orange-brown, barred and speckled with black; breast, pale orange or chestnut-brown, barred and speckled with black and brown; the belly greyish-white, barred with black and brown.

The females make a slight nest on the ground, frequently under the shelter of some low thick bush, in which they deposit from six to eight dirty-white eggs, of a yellowish-white, spotted and speckled with orange-brown. The task of incubation is performed by the female, and being deserted by the male, upon her alone devolves the care and provision of the brood. In summer the black-cock feeds upon seeds, the tender shoots of heath, leaves, and various insects. In autumn they live on crowberries, cranberries, whortleberries, and the trailing arbutus. In winter, and during severe and snowy weather, they eat the tops and buds of birch and elder, as well as the embryo shoots of various firs. They also feed on stubble-grounds, which may be contiguous to their accustomed haunts.

The flesh of this bird is sweet, and highly flavoured, not of so deep a colour as that of the red grouse: the internal muscle of the breast is remarkably white, and is esteemed the most delicate part.

Male black-cocks have sometimes weighed so much as four pounds, and females generally average two pounds.

PARTRIDGE-SHOOTING.

Both setters and pointers are used in partridge-shooting. Pointers are the most serviceable in an open country where partridges are plentiful. But setters are preferable in a rough country, or where game is scarce.

The best time for partridge-shooting is in the morning, commencing about two hours after sunrise, until mid-day: rest until half-past two or three o'clock, and continue until dusk, because, during the heat of the day, partridges resort to the side of a bank, and lie in the sun, abstaining from either eating or running. At the commencement of the season, more particularly when the weather is dry, the scent sinks, and when this takes place there is no use in attempting to find game; it is only a useless waste of labour to the sportsman as well as his dogs. Besides, should he hit upon the resort of the covey at mid-day, and they are either shot at or flushed, they will take wing, and in all probability go off to a great distance, and may spoil the day's sport. Partridges generally feed and sleep in separate places. Where food is plentiful it is not uncommon for them to remain all night. At day-break they call, and when the covey have congregated, they take flight to the stubbles, or other feeding-ground; and they will remain there all day if it afford sufficient shelter, unless .they are disturbed. If the weather is very dry and sultry, they frequently resort to potatoe or turnip-fields. In the evening they again call, and fly to their usual sleeping quarters. During the time of crying they are too restless to enable sportsmen to approach near enough to shoot at them. Two good and stanch dogs are sufficient for an individual in partridge-shooting.

Partridge-shooting commences on the first day of September, and ends on the thirty-first day of January.

The partridge is so well known as to require no particular description of it. It is found in every part of Great Britain and Ireland, where corn is cultivated, but never locates in districts where there is no arable land, consequently is never met with on the barren mountains of the North. In Scotland the partridge, the grouse, and the ptarmigan, each have their districts: the first is only found in the glens or valleys, and level tracks; the second on the lower hills or mountain-sides, while the latter are only met with on the summits of lofty mountains; and it is very rarely that they intrude upon each other's haunts, although it is quite possible to kill the three species in one day.

The partridge begins to pair in February, and at this season obstinate contests occur between the males for the possession of the other sex. They make no nest, but the female deposits her eggs on the bare earth, under cover of a tuft of grass, furze-bush, or other brush-wood, and not unfrequently in fields of clover, or amongst standing corn. They amount to from twelve to twenty, and are of a pale wood-brown colour.

Incubation, which occupies three weeks, is performed solely by the female, who sits very closely, and is with difficulty driven from her eggs. Montagu mentions an instance in which a partridge, on the point of hatching, was taken, together with her eggs, and carried in a hat to some distance; she continued to sit, and brought out her young in confinement. Several parallel cases have been known. As soon as the young are excluded, the male joins the covey and exhibits equal care and anxiety with the female for their support and defence. There can be few persons conversant with country affairs who have not witnessed the confusion produced in a brood of young partridges by any sudden alarm; or who have not admired the stratagems to which the parent birds have recourse, in order to deceive and draw off the intruder. Their parental instinct, indeed, is not always confined to mere devices for engaging attention; but where there exists a probability of success they will fight obstinately for the preservation of their young, as appears from many instances already recorded by different writers; one of which is sufficiently striking, as narrated by Mr. Selby, who says, "for the truth of which I can vouch. A person engaged in a field, not far from my residence, had his attention arrested by some objects on the ground, which, upon approaching, he found to be two partridges, a male and female, engaged in battle with a carrion-crow; so successful and so absorbed were they in the issue of the contest, that they actually held the crow until it was seized and taken from them by the spectator of the scene. Upon search, the young birds (very lately hatched) were found concealed amongst the grass: it would appear, therefore, that the crow, a mortal enemy to all kinds of young game, in attempting to carry off one of these, had been attacked by the parent birds, and with the above singular success. The ordinary weight of the partridge is fifteen ounces.

Partridges all move away together to their place of rest for the night, where they congregate on one spot, and from the appearance of their meetings or droppings, which are generally deposited in a circle of only a few inches in diameter, it would appear that the birds arrange themselves also in a circle, of which their tails form the centre, all the heads being outwards; a disposition which instinct has suggested as the best for observing the approach of any of their numerous enemies, whatever may be the direction, and thus increase their security by enabling them to avoid a surprise. Early in the morning they again visit the stubble for breakfast, and pass the rest of the day as above mentioned. Fields of clover or turnips are very favourite places of resort during the day.

THE RED-LEGGED PARTRIDGE.

So early as the reign of Charles the Second several pairs were turned out at Windsor, with the intention that they should propagate and form a stock for field-sports; these, however, did not succeed, as they became extinct in a few years. About the year 1770 the Marquis of Hertford and Lord Rendlesham procured eggs of this bird from the Continent, and placed them under domestic fowls; the former at Sudbourn, near Orford, in Suffolk, one of his shooting residences; the latter on his estates at Rendlesham, a few miles distant from Sudbourn: from these places the birds have been gradually extending themselves over the adjoining counties. They are now becoming rather plentiful in Norfolk; but it is found that they are not steady in their haunts, as they have been seen abundant on an estate in one year, while in the succeeding, none were to be met with; which could not be attributed to the breeding, as both seasons were alike favourable.

These birds sometimes take very long flights, as we may judge from the circumstance that the Rev. T. Fowler, of Colton, near the coast between Yarmouth and Lowestoft, knew two instances in which four or five red-legged partridges were found upon the beach there, in so exhausted a condition, that they were run down by the boatmen, after endeavouring to conceal themselves in fields of seaweed, and under the fishing-boats drawn upon the sand. In the Linnæan Transactions, it is mentioned that these birds are now very plentiful in some parts of Suffolk. At least one hundred and fifty brace have been seen upon Dunningworth-heath; they are also found in greater or less numbers from Aldborough to Woodbridge; and they are now to be seen in Lincolnshire and Cambridgeshire, and latterly said to be plentiful in Hertfordshire.

The red-legged partridge scrapes together a slight nest of dried grass, leaves, and other substances, among clover, growing corn or grass. The female lays from fifteen to eighteen eggs, of a reddish-yellow, approaching to white, speckled with reddish-brown. The young, like other partridges, soon quit the nest after they are released from the shell. Their food consists of the same kinds as that of the common partridge. They seem to prefer waste lands, interspersed with bushes, commons, and heaths, although they are to be met with in turnip-fields.

As an object of pursuit the red-legged partridge is not much esteemed by sportsmen. They are strong upon the wing, and generally more wild than the common partridge, and it is consequently much more difficult to get within gun-shot of them. They run before a pointer or setter like an old cock grouse, and unless they can be driven into furze, or some other such thick bottom, through which they cannot thread their way, there is but little chance of a shot. When wounded they will take shelter in a rabbit-burrow, or any other hole they meet with. Mr. Daniel mentions, that he found a covey of them, consisting of fourteen, which he met with near Colchester; they were in a very thick field of turnips, and for half-an-hour baffled the exertions of a brace of pointers to make them take wing, and the first that did so immediately perched on the hedge, and was shot in that situation, without its being known what bird it was; a leash more of them was at length sprung and killed by another person. For twenty-three years thereafter he never shot one. He was then at Sudbourn with a gentleman who was particularly anxious to kill a red-legged partridge, and hunted with a brace of capital pointers for them only: the instant the dogs stood, the birds ran and always took wing (notwithstanding all the speed exerted to head them) at such distances as to be out of the range of the shot from any fowling-piece. Upon the same grounds, and on that same day they laid until the springing spaniels (with which Mr. Daniel was shooting) almost touched them before they arose, and in a short time he killed two brace and a half of them.

The flesh of the red-legged partridge is white, but more dry than that of the common partridge, and consequently not so much esteemed. They generally weigh from eighteen to twenty-one ounces.

QUAIL-SHOOTING.

The quail is a bird of passage, but they also breed sparingly in Britain. They arrive in this country about the second week in May, and appear more partial to champaign countries than to those which are enclosed. The males arrive before the females, and advantage is taken of this circumstance by the bird-catchers in France, who annually decoy hundreds of dozens of males into their nets by imitating the call-note of the female, and they are sold to the poulterers. They keep them alive for some time, feeding them on hemp-seed, on which they grow very fat ; to this, probably, may be attributed the darker shade of their flesh, compared with those killed by the gun. They are sent to England in vast quantities, and sold to the poulterers. It has been ascertained by Mr. Yarrell, that the large number of three thousand have been purchased by the London dealers in game in one season.

Quail-shooting affords excellent sport when plentiful. They grow very fat, and what in a great measure contributes to this is their remaining still during the greatest part of the heat of the day ; they then conceal themselves in the tallest grass, lying on their side with their legs extended, in the same spot for hours together, and when forced upon the wing they seldom fly far, and generally in a straight line ; and they are so indolent, that a dog must absolutely come upon them before they are flushed.

Although the common quail is a migratory species, yet specimens are not uncommon in Great Britain and Ireland, after the great body of them have changed their abode, at that fixed period when they usually take their departure.

They generally arrive in this country about the beginning of May, and remain with us until the period of incubation is over, and their young ones able to accompany them in their autumnal migration to more southern latitudes, which usually takes place during the month of October.

Quails arrive from Africa in countless thousands on the numerous islands of the Grecian Archipelago about April, and hence, Pennant says, the warm southerly winds of that month bringing birds to Greece are called in that country, *Ornithex.* They are so numerous, in other countries in the line of their migration, that one hundred thousand are recorded to have been taken in one day on the west side of the kingdom of Naples. From thence they spread over Southern Europe, migrating every year as far north as Scandinavia and Russia.

The quail prefers an open country to a wooded or enclosed one. Quails are polygamous, and do not pair like the partridge, although it has a very great resemblance to that bird, but is of a much less size. These birds are very pugnacious, and will fight with determined resolution in the manner of our game-cocks. The Greeks and Romans kept quails for the purpose of fighting them, as they delighted in the amusement; and the fighting of these birds still continues to be a favourite pastime with the Chinese.

The flesh of the quail is considered delicate, and consequently is much in request in England, more especially in London during the season, namely, from May to August. So many as three thousand dozens have been purchased of the dealers by the London poulterers in one season.

The nest is rude; the female merely scraping a small hollow on the ground, in which she collects a few pieces of dry grass, straw, or stalks of clover, and lays from seven to twelve eggs, of a yellowish, or dull orange-coloured white, blotched and speckled with umber-brown. The time of incubation is three weeks, and the young are able to run soon after they leave the shell, and speedily learn to feed on insects, seeds, and green leaves. Many are found and killed in wheat-stubbles by partridge-shooters in the month of September: they fly quickly, but generally straight and low, and are difficult to be raised again after they have been once flushed and alarmed.

There is little doubt but the common quail was the bird which is spoken of in the sacred writings as affording food to the Israelites in the wilderness, for it is said in the thirteenth chapter of Exodus:—"And it came to pass, that even the quails came down, and covered the camp." And in the eleventh chapter of Numbers:—"And there went forth a wind from the Lord, and brought quails from the sea, and let them fall by the camp, as it were a day's journey on this side, and as it were a day's journey on the other side, round about the camp, and as it were two cubits high upon the face of the earth. And the people stood up all that day, and all that night, and all the next day, and they gathered the quails; he that gathered least, gathered ten homers, and they spread them all abroad for themselves round about the camp."

LAND-RAIL, OR CORNCRAKE-SHOOTING.

The landrail is also a bird of passage, and makes his appearance in this country about the second week in May. They may then be heard in grass meadows and green cornfields uttering their well-known harsh, monotonous cry of *crek-crek*, *crek-crek*, which much resembles the noise made by stripping forcibly the teeth of a large comb, under the fingers: as we approach the sound retires, and is again heard at a distance of fifty paces.

It is easily known when a dog scents a landrail, from his keen search, and the obstinacy with which he persists in keeping the ground, insomuch that it may be sometimes caught by the hand: it often stops short and squats; the dog pushing eagerly forward, overshoots the spot, and loses the trace, and the landrail, it is said, profits by his blunder, and retraces its path; nor does it spring until driven by the last extremity; then it flies heavily, and generally with its legs hanging down, but never far at a flight, when, as it lights, it runs off with great rapidity, and before the sportsman has reached the place the bird is at a considerable distance; or is sprung a second time with great difficulty. The fleetness of its feet compensates for the tardiness of its wings: all its excursions, windings, and doublings in the fields and meadows, are performed by running. When upon wing, if it flies to a hedge, the sportsman is recommended to look upon the boughs, as it is almost sure to perch and sit till he almost touches it, and frequently by that means eludes all pursuit.

I remember upon one occasion, while walking in the fields in Ireland, accompanied by a setter, but without a gun, my dog flushed a landrail, and, knowing the habits of the bird, I ran to the spot where it alighted; and my dog took up the scent and followed the bird with great eagerness. It took shelter in a drain and squatted; but on the dog again approaching, it flew up, the dog striking it down with its paw, and, without attempting to mouth it, kept it down until I came up and secured the bird. I then clipped one of its wings, and it proved an excellent subject for training a litter of young pointers which a friend of mine had at the time. It was highly interesting to see the accuracy with which the young dogs followed its track.

The landrail is plentiful in Britain, but abounds in Ireland, where it is probable they spend the winter. They are very abundant in the Island of Anglesea, where they appear about the third week in April, supposed to come there from Ireland. On their first arrival it is not uncommon for a tolerable sportsman to shoot six or eight of a morning. Mr. Selby, of Twizell House, Northumberland, the celebrated ornithologist, mentions that he has shot eight or ten in the course of an hour, in a single field, in the rich meadows upon the banks of the Trent, near Newark, a favourite haunt of crakes, which is usually visited by great numbers: indeed, there is no part of England or Scotland but where these birds are met with; and their unceasing cry at once discovers their presence. Whenever quails are plentiful, it has been remarked that landrails are also numerous; which no doubt depends on a peculiarity in the season being favourable to these birds. When landrails first arrive in this country they are so lean as to weigh less than six ounces, but before their departure have been known to exceed eight, and are so fat that it exudes from the shot-holes like oil. The flavour of their flesh is very delicious.

Mr. Jesse relates the following curious particulars respecting this bird:—"I have met with an incident in the natural history of the corncrake, which I believe to be perfectly accurate, having been informed that the bird will put on the semblance of death when exposed to danger from which it is unable to escape. The incident was this:—A gentleman had a corncrake, brought to him by his dog, to all appearance quite dead. As it lay on the ground he turned it over with his foot, and was convinced that it was quite dead. Standing by, however, in silence, he suddenly saw it open an eye. He then took it up; its head fell; its legs hung loose, and it appeared again quite dead. He then put it in his pocket, and before long he felt it all alive, and struggling to escape. He then took it out; it was as lifeless as before. Having laid it again upon the ground and retired to some distance, the bird in about five minutes warily raised its head, looked round, and decamped at full speed. I have seen a similar circumstance take place with a partridge; and it is well known that many insects will practise the same deception."

Landrails probably congregate before they emigrate, as I am assured that a considerable number were, on one occasion, seen together near the sea-shore in the neighbourhood of Swansea, about the time they usually take their departure.

The nest of the landrail is formed on the ground, and consists of a few dry plants, and generally a field of thick grass, clover, or green corn is selected as the place for incubating: the female deposits from eight to ten eggs, of a reddish-white, spotted and speckled with ash-grey and pale reddish-brown. The young are covered with black down, and run as soon as they quit the shell, and follow their mother, but do not quit the meadow until the scythe sweeps away their habitation. The late hatches are plundered by the mower, and all the early broods then shelter in buck-wheat or other grain, and in waste grounds overspread with broom, where in summer they are found: a few return again to the meadows at the end of the season. Yarrell records the circumstance of some men mowing grass upon a small island belonging to the fishing-water of Low Bells, on Tweed: they cut the head from a corncrake that was sitting upon eleven eggs: about twenty yards from this spot they had nearly decapitated a partridge in the same way, which was sitting upon eighteen eggs; but observing her, the mowers took the eggs from the nest of the corncrake and put them into that of the partridge. Two days after she brought out the whole brood, which were afterwards seen running about the island following the partridge, which catered for them all, and was observed to gather her numerous family under her wings without any distinction. Many landrails are able to fly in six or seven weeks after their extrusion from the egg. The food of the landrail consists of worms, slugs, snails, and insects.

Landrails are considered delicate articles of food, and are in high estimation: their ordinary weight is about six ounces; but instances have occurred where they have weighed as much as eight ounces and a half.

WOODCOCK-SHOOTING

Although woodcocks are not birds protected by the game-laws, they afford the sportsman as much, or perhaps more diversion than any that are objects of their immediate recognizance.

Woodcocks are birds of passage, and arrive in Great Britain about Michaelmas, and leave this country in March. They breed on the Alps, and other mountainous localities. Sweden, Norway, and Russia are also their abodes in summer, as well as other northern parts of Europe, as far as Kamtschatka and Iceland, and generally through the old continent and its islands. From the higher northern latitudes they usually retire on the beginning of winter, so soon as the frosts commence, which force them into milder climates, where the ground is open and adapted to their manner of feeding. The time of their appearance and disappearance in Sweden coincides exactly with that of their arrival in and their retreat from Great Britain. Their autumnal and vernal appearance on the coast of Suffolk have been accurately noted. They come over sparingly in the first week in October, the greater numbers not arriving until November and December, and always after sunset. It is, however, the wind, and not the moon, which determines the time of their arrival; and it is probable that this should be the case, as they come hither in quest of food, which fails them in the places they leave. If the wind has favoured their flight, their stay on the coast where they drop is very short, if any; but if they have been forced to struggle with an adverse gale, such as a ship can hardly make any way with, they rest a day or two to recover their fatigue; so greatly has their strength been exhausted in some instances, that they have been taken by hand in Southwald streets. They do not come in flocks, but separate and dispersed. When the redwing appears in autumn, on the Suffolk coast, the woodcocks are certainly at hand. Between the twelfth and twenty-fifth of March they throng towards the coast to be ready for their departure, the first law of nature bringing them in autumn, the second carrying them from us in spring.

From the observations of Mr. Selby, of Twizel House, Northumberland, an accurate observer of nature, it appears that woodcocks perform their migrations in calm as well as blowing weather; for he says:—"I have found that these birds always come over in hazy weather, with little wind, and that blowing from the north-east; and it is probable that they then find the upper region of the atmosphere, in which they fly, freer from counter currents of air, than in more open weather. After a night of this description, I have frequently met with great numbers upon the edges of plantations, in hedges, and even in turnip-fields, and enjoyed excellent sport for the day; but on seeking the following morning for a renewal of similar success, I have not found a single bird, the whole flight having proceeded on their course during the intervening night. It is during this time that woodcocks, like most migratory birds, perform their journeys; and it seems probable that those which halt upon the eastern coast of Scotland, and the northern counties of

England, have completed their task from shore to shore, between sunset and sunrise, as they appear but little fatigued on their arrival, provided the weather has been calm. The distance of the coasts of Norway and Sweden, from whence these visitors are supposed to come, offers no objection to this supposition, as a continued flight of eight or ten hours, even at a rate inferior to what I conceive they are capable of accomplishing, would suffice for the transit. Another argument for this supposition, is the high state of condition in which the birds generally arrive on our shores, especially at an advanced period of the season, by no means indicating the wasting effects of very long-continued exertions. It appears that they fly at a considerable altitude, as, indeed, most birds do when performing their migratory movements. A respectable person who lived upon the coast, and who, being a keen pursuer of wild-fowl, was in the habit of frequenting the sea-shore at an early hour in the morning, assured me that he had more than once noticed the arrival of a flight of woodcocks coming from the north-east, just at day-dawn. His notice was first attracted by a peculiar sound in the air over his head, that, upon attending to he found proceeded from birds descending in a direction almost perpendicular, and which, upon approaching the shore, separated and flew towards the interior; these he pursued and shot, and they proved, as he surmised by the view he had of them as they flew past him, to be woodcocks." Mr. Selby also noticed that " the flights of these birds, which seldom remain longer than a few days, and then pass southward, consist chiefly of females; whilst, on the contrary, the subsequent and latest flights which continue with us, are principally composed of males. It has been noticed by several authors, that the arrival of the males, in a number of our summer visitants, precedes that of the females by many days; a fact from which we might infer, that in such species a similar separation exists between the sexes during their equatorial migrations."

Upon the Sussex coast, woodcocks have been seen at their first dropping, in considerable numbers, in the churchyard, and even in the streets of Rye.

The woodcock rises heavily from the ground, and makes a noisy flapping with his wings; when found on a heath, in a hedge-row, or path in a wood, he only skims along the ground; his flight is seldom rapid, and the marksman can desire no fairer object; but when sprung in tall wood, where the top must be cleared before he can take a horizontal flight, the woodcock ascends with great velocity, and in this case the precise instant of shooting is not easily determined; when turning and twisting through the branches of the trees it is difficult to catch any aim at him; and it is believed more woodcocks are killed from firing at them by certain theoretical rules than by a proper sight of the object. Although the flight of the woodcock for the time is rapid, yet it is seldom long supported; it stops with such promptness as to fall apparently like a dead weight: a few moments after being upon the ground, it runs swiftly, but soon pauses, raises its head, and casts a glance all around, before it ventures to look in the herbage or under the stubs, and frequently the sportsman, who imagines the bird marked to a certainty, is deceived, by its having tripped away to some distance before he arrived at the spot where he perceived it to alight. Woodcocks are inhabitants of the woods during the whole winter, if the weather is open; but if severe frosts set in, they will disappear during their continuance, except a few, which by chance may be found in certain coverts, where there are warm springs, which do not freeze. About a month previous to their quitting this country, in the spring, it is not unusual to see them near the woods in pairs, at the morning and evening flight-time, and at that period to hear them, when flying, make a small piping noise: at all other times they are silent. Woodcocks are fullest in December and January: from the third week in February, when they usually pair, until their departure, they are greatly inferior in flesh and flavour.

Springing spaniels and cockers are the only dogs well adapted for woodcock-shooting. It is particularly to be remembered that springers, to be excellent for woodcock-shooting, should quest upon the haunt, hunt the ground close, and at the same time with great spirit. The woodcock seldom flushes (especially the first time) until winded by the springer: it conceals itself under the stubs, and rarely makes much work before laying itself up, so that spaniels for this use must have the finest noses. It may save the sportsman time and trouble to recollect, that after spaniels have flushed woodcocks two or three times, they either pitch in the ditch upon the bank of the wood, or betake themselves to the hedges adjoining to the covert: a person who marks well is a valuable assistant in this diversion.

The author of Wild Sports in the West, says, "Woodcock-shooting in the west of Ireland is acknowledged to be very superior; and when the flight has been large, and the season is sufficiently severe to drive the birds well to cover, there is not, to a quick eye, more beautiful shooting in the world. Some of the covers are copses of natural wood, situated in the very centre of the mountains, consequently, when the snow falls, every woodcock for miles around deserts the heath, and seeks the nearest shelter. Then will the sportsman be amply repaid for his labour. From a copse of not more than thirty acres in extent, I have seen fifty couple of woodcocks flushed; and as several excellent covers lay in the vicinity, it was no uncommon thing for two or three guns to bring home twenty, nay, thirty couple." The Earl of Claremont shot fifty couple in one day; but it should be premised, that such was the abundance of these birds as to be sold in some parts near Ballyshannon, in the county of Donegal, for one penny each, and the expense of powder and shot. It is recorded by Mr. Daniel, that Mr. Yea, of Swansea, killed one hundred couple in the season of 1796.

The woodcock is a nocturnal bird, seeking repose during the day; the haunts selected by them are usually the closest brakes of birch and other brushy underwood, and where the ground, from the deep shade, is nearly free from herbage; and, for this reason, thick fir-plantations of ten or twelve years' growth are a favourite resort. They are generally found in extensive woods, and abound most in thickets by the sides of open glades, or where roads intersect, as by these they pass to and from their feeding-ground at evening and in the dawn of the morning. Sir Humphrey Davy, in his Salmonia, says, "A laurel or holly-bush is a favourite place for their repose: the thick and varnished leaves of these trees prevent the radiation of heat from the soil; and they are less affected by the refrigerating influence of a clear sky, so that they afford a warm seat for the woodcock."

The woodcock is naturally a very shy and retired bird, rarely taking wing by day, unless disturbed; but on the approach of eve all, as if by common consent, quit the woods nearly at the same instant, and wander over the meadows in search of splashy places and moist ditches for food, retiring to their hiding-places again just at dawn of day. Thus, when most other birds are recruiting exhausted nature by sleep, these are rambling through the dark, directed by an exquisite sense of smelling, to those places most likely to produce their natural sustenance; and by a still more exquisite sense of feeling, with their long bill collecting their food. The eye is not called into use, for, like the mole, they actually feed beneath the surface; and by the extreme sensibility of the bill, which is thrust into the soft earth, not a worm can escape that is within reach. The nerves in the bill, as in that of the duck-tribe, are numerous, and are highly sensible of discriminating by touch. To test this, a number of worms were put into a large garden-pot and covered with earth to the extent of five or six inches; which a woodcock very soon discovered, and drew forth every worm. The experiment was repeatedly made, and not one was left in the morning. Being a nocturnal feeder, the eyes of this bird are large and prominent, in order to collect the scattered and indistinct rays of twilight: their situation is also peculiar, being placed far back in the head, which enables it to probe the ground a greater depth without inconvenience, and at the same time considerably extends the sphere of vision.

There are many well-attested instances of woodcocks remaining in this country almost every season, and producing their young. They are very early breeders, and the young are hatched in the end of March. Mr. Blyth saw two young woodcocks on the 20th of April; and Mr. Gould, on the 22nd of April, exhibited at the Zoological Society two woodcocks apparently about three weeks old. Sir F. Mackenzie found four nests of this kind on his estate of Conan, on the eastern coast of Ross-shire, one having four and the others three eggs each, all of which were hatched and ran. He repeatedly saw the young birds before they took wing. Mr. Williamson stated to Mr. Loudon, for his Magazine in 1836, that in the spring of that year three nests were found in one wood, the property of Francis Hurt, Esq., of Alderwasley, near Derby. All the nests contained eggs. The parent birds sat so close that they did not rise until approached within the distance of a yard. They were all in dry, warm situations, amongst dead grass and leaves, without any attempt at concealment; they were entirely composed of dead leaves, chiefly of the common fern, loosely laid together, without any lining. They have also been known to breed at Braham-castle, Ross-shire, Castle Forbes, Aberdeenshire, and Dunkeld, Perthshire; and in England, in Sussex and Hertfordshire. Woodcocks carry their young in their claws. The eggs are pale yellowish-white, the larger end blotched and spotted with ash-grey, and two shades of yellow-brown.

SNIPE-SHOOTING.

Snipe-shooting, when the birds are plentiful, is an excellent diversion; they puzzle the marksman by the irregular twistings and turnings of their flight when first sprung; but this difficulty is soon surmounted, if the birds are permitted to reach a certain distance, when their flight becomes steady and easy to traverse with the gun: there is no reason to be apprehensive of their getting out of the range of the shot, as the smallest pellet will kill, and they will fall to the ground if struck but slightly. Snipes, like woodcocks and many other birds, always fly against the wind; therefore by keeping the wind at his back, the sportsman has this advantage of the bird when it rises, that it presents a fairer mark. These birds are scarcely good until November, when they get very fat. In hard, frosty, and more particularly snowy weather, snipes resort in numbers to warm springs, where the rills continue open and run with a gentle stream; these, on account of their long bills, are then the only places where they can haunt for food. Snipes will generally lie well to a steady pointer, and some of these dogs have a singular knack at finding them.

Snipes are birds of passage, although there are many instances upon record where they breed in Britain, more particularly in the northern parts of Scotland. Indeed, the common snipe may really be considered as indigenous to Great Britain, as it is now known to breed in small numbers along the southern line of the English coast; and as this bird is known to go to high northern latitudes for the breeding season, it is found, as might be expected, producing its eggs and young much more constantly as well as frequently in the northern counties of England, Ireland, and Scotland, and its islands. However, the number bred here form but a small proportion of those which fall under the gun of the sportsman and poacher. They have been known to breed as far south as Devonshire and Cornwall, as well as Dorsetshire; and Mr. Jesse says, in his Notes to "White's Selbourne," under date of July 30th, 1843:—"Young snipes were seen at the Bishop of Winchester's table, Farnham Castle, on this day. They had bred on all the moor heaths of this neighbourhood. They are bred constantly on Burwell and Swaffham fens, as well as in Norfolk." Mr. Selby found them in Sutherlandshire; and Sir Humphrey Davy says:—"In the heather surrounding a small lake in the Island of Hoy, in the Orkneys, I found, in the month of August, 1817, the nests of ten or twelve couple of snipes." Mr. Hewitson met with several nests on Foula, the most westerly of the Shetland Islands. Towards the end of March or beginning of April, by which time snipes have nearly perfected their summer plumage, the breeding season commences, and the birds change their note entirely from that they utter in winter. The male will keep on wing for an hour together, mounting like a lark, uttering a shrill, piping noise; it then descends with great velocity, making a bleating sound, not unlike that of a goat, apparently produced by a peculiar action of the wings; as the time this sound is emitted is when he is descending and making a tremulous motion with his pinions. The nest is very inartificial, consisting of the materials around it, coarse grass, and sometimes heath. It is generally placed on a stump or dry spot, near a splashy or swampy place: the eggs, like those of the lapwing, are placed invariably with their ends inwards, being much pointed; they are generally four in number, of an olivaceous colour, blotched and spotted with rufous-brown, some having dusky patches at their larger end. The adult birds are exceedingly attached to their offspring; and if any one approach near the nest they make a loud and drumming noise above the head, as if to divert the attention of the intruder.

The ordinary weight of the common snipe is about four ounces. Its food consists of worms, insects, and small shells with their animal inhabitants, and sometimes minute seeds. The length of this bird is about ten inches and a half.

A Norfolk gentleman, who made some interesting observations upon the times of the snipe's appearance in the vicinity of Norwich, says, "that their first coming is early in September, which is merely transitory, stopping for a day or two, or perhaps only a few hours; they are then often found in large flocks, but lay very light; at the end of October the greatest number arrive, are found more universally dispersed, and afford better amusement than earlier in the season; but immediately as the severity of the winter increases, they almost entirely disappear, and return no more until March, previous to their final departure." The backwardness or forwardness of the season always regulates their return, and the gentleman above alluded to remarked that the time of flowering of wild plants and that of the re-appearance of snipes are coincident.

There are five distinct species of snipes which frequent the British Islands, viz, the common snipe, (*S. gallinago,*) the great snipe, (*Scolopax major,*) the jack-snipe, (*S. gallinula,*) Sabine's snipe, (*S. Sabini,*) and the brown snipe. (*S. grisea.*)

THE JACK-SNIPE.—This bird is smaller than the common snipe, being only from eight inches to eight inches and a half in length, and is distinguished from that bird by several other peculiarities. It is more decidedly a winter visitant than the common snipe, and is more solitary in its habits. It rarely spends the summer in Great Britain. It frequents and feeds on bare boggy grounds, and when not searching for food, selects sheltered situations among strong rushes or coarse long grass, and the luxuriant vegetation common to moist ground. In such situations this bird is remarkable for its sluggish habits, seldom taking wing until almost trodden upon, which has acquired for it in France the cognomen of *Bécassine sourde,* or Deaf snipe, as if it were deaf to the approach of an enemy ; and instances have actually occurred in which the jack-snipe has permitted itself to be picked up by hand before the nose of a pointer. Its flight is more direct and without the twistings and evolutions of the common snipe, and more resembling that of a woodcock, when flying in open space, the wings being considerably bent, and forming an acute-angle with the body. It seldom flies to any distance, but drops in the first miry spot that presents itself, from whence it is roused with even more difficulty than at first. It utters no alarm-cry when it rises, nor has any note belonging to it been detected. Though generally dispersed over the British islands in winter, it is considered to be less numerous as a species than the common snipe. It appears to have particular attachment to certain localities, so much so, that a sportsman shooting for years in succession on the same ground, knows exactly where to look for any jack-snipe that is in his neighbourhood. The first flights of the jack-snipe generally arrive about the second week in September, and they again migrate at the end of February or beginning of March, according to the rigour of the season.

No well-authenticated instance of the nest of the jack-snipe having been found in Britain is on record. In the delicacy of its flesh it is equal to its congeners; and, considering it in that point of view, is not too diminutive to attract the aim of the sportsman. In open and mild weather it soon becomes exceedingly fat, and as speedily loses its condition in severe frosts, when its feeding-ground is limited to the heads of springs and unfrozen ditches. Its usual weight, when in full condition, seldom exceeds two ounces and a quarter.

Sabine's Snipe.—This bird is at once distinguished from every other European species of snipe by the total absence of white from its plumage, or of any other of those lighter tints of rust-coloured yellow, which extend more or less in stripes along the head and back of them all. In this respect it exhibits a strong resemblance to *Scolopax saturata* of Dr. Horsfield, besides differing in its general proportions. It has twelve tail-feathers, in which respect it agrees with the jack-snipe; while the common snipe has fourteen, and the great snipe sixteen. It differs in a strong degree from the jack-snipe in its bill being nearly a third longer. In its general appearance it bears a greater resemblance to the woodcock than to the other European species of the snipes; but it may be immediately recognised from that bird by the two exterior toes being united at the base for a short distance, as in most of the snipes, while those of the woodcock are divided to the origin.

This is a very rare bird, for, as far as it is known at present, only six instances have occurred in which it has been shot, although it is quite probable that many others may have been brought down by the guns of sportsmen who were no naturalists, and consequently might overlook the distinctions between that bird and the jack-snipe.

The first bird of this species which was met with was shot on the 21st of August, 1822, in the Queen's County, Ireland, by the Rev. Charles Doyne, of Portarlington, who, perceiving it was a distinct species, immediately forwarded it to the late distinguished ornithologist, J. N. Vigors, Esq., member for Carlow, who found it to be a new and undescribed species, and named it after colonel Sabine, well known for his connexion with discoveries during the Polar expedition. A female was killed on the banks of the Medway, near Rochester, on the 26th of October, 1824. A third specimen was shot by Captain Bonham, of the tenth Hussars, in November, 1827, near Garvagh, in the county of Londonderry, who did not kill it until by a third shot, which afforded him an opportunity of remarking its disregard for his presence, which was manifested by its alighting quite near again, after being fired at, in the manner of the jack-snipe. It did not call, after being sprung, in the manner of the common snipe. The fourth that was killed was sent to Mr. Selby from the neighbourhood of Morpeth, possessing all the characters of Mr. Vigors's bird, but the under parts were perhaps a little darker. We are informed by Mr. Eyton, in his "Rare British Birds," that he was told by the Earl of Malmesbury that a snipe of this species was killed by his son in the breeding season near Heron Court, Hampshire: the sixth was said to have been killed in Lancashire.

It is very remarkable that this very rare species has not fallen into the hands of any naturalist out of Great Britain, and it is to be hoped that sportsmen who may happen to meet with it will preserve it, and send it to some of the public institutions of the kingdom. The following is an accurate description of the bird, by which it will be at once distinguished from its congeners.

The whole length of the bird is about eleven inches; the beak two inches and five-eighths, or three-quarters, and is dark-brown at the point, paler reddish-brown at the base; irides, dark-brown; upper part of the head, the back of the neck, back, scapulars, wing, coverts and tertials, dusky-brown, each feather varied by narrow transverse bands of pale yellow-brown, which are less numerous on the back than on the wings; primary quill-feathers, dull black, with black shafts; upper tail coverts, greyish-brown; tail-feathers with the basal half black, the terminal half chestnut-brown, spotted and barred with black; the two centre feathers have rather more, and the outer feathers rather less of black than the others; chin, neck, breast, and all the under parts of the body, a mixture of dull brown and pale yellow-brown, in alternate yellow bars over the whole surface; legs and toes very dark chestnut-brown, with black claws.

For the information of sportsmen who may be desirous of seeing this bird, I may mention, that the specimens are deposited as follows:—The first in the museum of the Zoological Society, Bruton-street, London; the second in the valuable collection of Mr. Dunning, of Maidstone; the third in that of Mr. William Thompson, Donegal-square, Belfast; and a fourth in the collection of Mr. W. P. Selby, Twizel House, near Brampton, Northumberland.

The Great or Double Snipe.—This bird was long confounded with the common snipe, as on the wing it looks very little larger; but may be at once distinguished by its tail being spread like a fan; its flight is also steadier and heavier, which may in a certain degree arise from the aptitude of this bird to make fat.

The season at which the great snipe is generally met with here is in autumn, and for the most part in September: the greater part of those obtained are young birds of the year; and from this species being known to breed in high northern latitudes, these autumnal visitants are seen while on their route to their more southern winter-quarters. Their course both in spring and in autumn is considered by Mr. Selby to be generally to the east of the longitude of the British islands, and it is well known that only one instance is on record of that bird being shot in Ireland; and in England they are most frequent in the eastern counties.

The spring cry of the great snipe commences with a sound resembling the smack of the tongue, and thereafter four or five louder follow. It never has been known to breed on the British isles. The whole length of the bird is about twelve inches; the weight from seven to nine ounces, depending on age and sex. The females are longer than the males.

Mr. Lloyd says, when shooting in Sweden, "The double or solitary snipes, are always found singly, or at most in pairs. These birds are usually so fat in autumn as apparently to be hardly able to fly; indeed, when flushed, they generally proceed but a short distance before they settle again; their flight is heavy and steady, and they present the easiest mark possible. Four couple was the greatest number of these birds that I ever killed in Sweden in one day. They were by no means plentiful in the vicinity of Gothenburg." But from the account given by Mr. Greiff, it may be inferred that Mr. Lloyd was not favourably situated; for he says, "the double snipe is a bird of passage in Sweden, and amongst those which arrive the latest." At the end of the month of July, when the meadows are mowed, the shooting of these birds with the pointer commences, and continues until towards the end of September. In the whole round of sporting this affords one of the greatest pleasures. These birds are so easy to shoot, that in some places fifty or sixty may be killed in one day, particularly in autumn, when they are so fat that they nearly burst their skins.

The Brown Snipe.—This is another rare bird, of which six specimens only have been killed in Britain. The first was killed in Devonshire, in October, and is now preserved in the British Museum; a second was killed in the same county, and is in Mr. Drew's collection; another was killed near Carlisle, in 1835, and is the property of T. C. Heysham, Esq.; and a fourth was shot at Yarmouth in the autumn of 1836, and is possessed by the Rev. Leonard Rudd, Yorkshire; and Israel Gurney, Esq., of Norwich, possesses two, which were killed there in 1840, and are preserved in his collection. This bird is a native of the United States of America. The whole length of the bird is from ten to eleven inches, depending on age and sex; the beak also varies in length from two inches to two inches and a half.

SHOOTING WILD DUCKS, ETC.

This sport is only fitted for those who have hardy constitutions; and even such sportsmen who have a relish for it must take care to be warmly clothed, as it can only be followed in severe weather. Besides the apparel being of the strongest description, the legs must be protected by what are called *wads* by fishermen, viz., strong knit stockings, which come up to the middle of the thighs; and even with these double defenders of the legs a pair of water-proof boots will also be indispensable. A cap must also be worn, made of skin, as wild-fowl are much afraid of a hat. To render leather impervious to water it must be well anointed with the following composition, put on while lukewarm :—

Bees'-wax	½ pound,
Bungundy pitch	2 ounces,
Resin	2 ounces,
Mutton suet	½ pound;

these to be melted over a slow fire until they are well incorporated.

The haunts of wild-fowl must be approached with as little noise as possible, and it will be found that great caution is requisite to get within gun-shot of them. They have a strong tendency to fly towards water whenever they are disturbed, so that the sportsman must be accompanied by a dog which has been trained a retriever, such as a water-spaniel, or Newfoundland dog; or a setter if he likes the sport, as wounded birds are very likely to fall in the water.

Mr. Gilpin gives the following interesting account of wild fowl shooting upon the Hampshire coast:—"The coast between Hampshire and the Isle of Wight is peculiar, consisting at ebb-tide of vast muddy flats, covered with green sea-weed: it affords the fowler an opportunity of practising arts perhaps nowhere else resorted to. Fowling and fishing are, indeed, on this coast commonly the employment of the same person. He who in summer, with his line and net, plies the shores when they are overflowed by the tide, in winter, with his gun, as evening draws on, runs up in his boat among little creeks which the tide leaves in the mud-lands, and lies in expectation of his prey. Sea-fowl usually feed by night, when in all their multitudes they come down to graze on the savannahs of the shores. As the sonorous cloud advances, (for their noise in the air resembles a pack of hounds in full cry,) the attentive fowler listens which way they bend their course; perhaps he has the mortification to hear them alight at too great a distance for his gun (though of the longest barrel) to reach them, and if he cannot edge his boat round some bending creek, which it is not always in his power to do, he despairs of success that night; perhaps, however, he is more fortunate, and has the satisfaction to hear the airy noise approach nearer, until at length the host settles in some plain upon the edge of which his boat is moored: he now, as silently as possible, primes both his pieces anew, (for he is generally double-armed,) and listens with all his attention: it is so dark that he can take no aim, for if he could discern the birds they could also see him, and being extremely timorous would seek some other pasture. Though they march with noise, they feed in silence; some indistinct noise, however, if the night be still, issue from so vast a concourse; he directs his piece, therefore, towards the sound, fires at a venture, and instantly catching up his other gun, discharges it to where he supposes the flock to rise on the wing. His gains for the night are now decided, and he has only to gather his harvest: he immediately puts on his mud-pattens, (flat pieces of board, which the fowler ties to his feet that he may not sink in the ooze,) ignorant yet of his success, and goes groping about in the dark in quest of his booty, picking up sometimes many and sometimes not one.

During the time of long frosts, if going upon the water or into the marshes after wild-fowl does not suit the shooter's convenience or choice, by attending the brooks or small rivers that are partially frozen early of a morning, and following their course, he may frequently find diversion, and be almost certain of meeting with wild ducks, searching both for food and fresh water; he will also be equally sure to get shots, for they will not rise until he is close upon them. In extreme severity of frost, with much and permanent snow, the warm springs which do not freeze are spots that then seldom fail, as the wild ducks are confined to these places, in order to procure the aquatic herbs growing there, and which are almost the sole food that remains for them at this inclement period.

The following interesting instance of the intelligence of the wild duck, in using a cunning device for the protection of its young, is recorded by Mr. Pilkington in his "History of Derbyshire." As he was walking in a path leading through a coppice not much frequented, and passing some brambles, the roots of which were clothed with long grass, he came upon a wild duck, with several young ones beside her. He was close upon her before she perceived him, when she instantly uttered a loud note of alarm, and bounded almost close to his feet; then, with another jerk, threw herself a little forward, out of the reach of his hand, as he stretched it forth to take up what he supposed an easy capture. Another hop and flutter threw her to a greater distance, while he pursued, supposing her to have both a leg and wing broken. He marked the bush with his eye, where he saw the ducklings, concluding that he could take them at his leisure, after having secured the dam. He briskly continued his pursuit, while the bird persevered in counterfeiting lameness and inability of flight, throwing herself forward to a distance proportioned to his speed, but sufficient to clear his grasp, yet near enough to encourage his hopes. At length, chagrined, and increasing his pace, he began to run, while the bird, on his nearer approach, alternately rose a little on the wing and tumbled upon the ground, thus keeping up his attention until she led him more than half a furlong from the spot where he first perceived her. Rising suddenly above his head, she then winged her flight, as in triumph, to a marsh, at the distance of nearly a quarter of a mile, in which there was a large pond, where she alighted secure. Disappointed in obtaining her, he consoled himself by considering that he could take the young ones, and retraced his steps to the bush for the purpose. He examined the spot with care, turning back the grass in every direction for some distance around, and even beat about the contiguous brushwood, but in vain; no ducklings were to be seen, nor could his utmost search discover them. Nature had taught them, when the parent gave the alarm, to provide for their safety by escape and concealment.

RULES TO BE ATTENDED TO IN SHOOTING.

Attention to the following particulars are requisite to ender a sportsman successful in the field.

1. The choice of a gun is of the utmost importance, not only as regards its usefulness, but also as regards the safety of the user. On the last point we shall specially treat in our notice on the bursting of gun-barrels. Let the fowling-piece be light and thin in the barrel, and equally thick throughout.

2. The barrel should never be shorter than 32 inches, nor longer than 38. The range does not depend so much on its length as may be imagined.

3. A barrel of calibre from 22 to 24 will project the shot as closely as one of the smallest calibre. Much diversity of opinion has prevailed on this now clearly ascertained point.

4. The length and proportions of the stock should be commensurate with the length of the arm of the sportsman. The curvature will depend upon the length of the neck of the user. He that has a short neck, and consequently short shoulder, will require to have the stock straight, according to the degree of shortness of his neck. Some individuals have necks considerably longer than the average length, consequently the stock of their gun must be so much more bent. Upon the nicety of the curvature of the stock, as adapted to

the points alluded to, will depend the success of the sportsman in taking a good aim, and the facility with which he can bring the *sight* to the eye, and *cover* his game in taking aim.

5. Great attention is requisite in keeping powder perfectly dry, and it ought to be kept in tin or copper flasks. The quantity of powder requisite for a charge will depend upon the size of shot, which is regulated by the kind of game as well as the season of the year. A measure should be procured with a guage of the various proportions marked on it. Patent shot is now in universal use; the sizes and range are described under the article SHOT.

6. Patent wadding is the best, or an old felt hat cut into small circles the size of the calibre of the fowling-piece. It should only be moderately rammed down. Brown-paper should never be used as wadding, and where proper wadding cannot be obtained at the time, soft grey paper or an old newspaper will be good substitutes for the patent wadding.

7. Whenever a piece is fired it should be reloaded without delay.

8. No. 6 shot is used for shooting at a quadruped, such as a hare, &c., 45 to 50 paces is the range of the distance likely to take effect; and for birds on the wing from 60 to 65 paces. No genuine sportsman will think of shooting at birds while sitting on the ground or perched on a tree: it is shooting on the wing which is the delight of the sportsman.

9. In shooting at a hare or other animal running, or a bird flying, aim must be taken a little way before the animal, according to the distance it is from the shooter, for which no precise rules can be laid down; but it will be best acquired by experience.

10. Take care always to hunt *with* the wind. When the weather is warm the sportsman must take open ground; but

when cold, the sunny sides of hills, heath covers, stubble-fields, and hedge-rows, are the most likely places to find game. After firing the dogs should be called in, and instead of proceeding forward to pick up the birds which he has killed, let him first mark where the pack or covey have settled. Morning is the best time for shooting.

11. Never fire more than twenty or twenty-five shots without washing out the barrel.

12, Always carry the fowling-piece over the shoulder, or in the hand, horizontally, with the muzzle pointed forwards; and on NO ACCOUNT WHATEVER retire from the day's sport with the gun loaded, taking care to draw the shot before entering a house for the night ; as by taking loaded guns into houses INNUMERABLE FATAL accidents have occurred from the want of this precaution.

SHOT.

Patent shot is now in universal use, and success in the field will greatly depend upon the use of proper sizes, according to the game, as well as the season at which it is to be used.

Grouse-shooting commences on the 12th of August, and it will be found that No. 5 will answer for the strongest birds. The same number is applicable to pheasant-shooting. Later in the season, when the birds are wilder, and the difficulty of getting within shooting distance increases, No. 4 may be substituted instead of No. 8.

Partridge-shooting commences on the 1st of September, and Nos. 8 or even 9 may be selected at the commencement of the season, as the birds then sit closer, and consequently flush much nearer ; but as the birds become stronger on the wing about October and November, recourse may be had to Nos. 7 and 8 ; but we would by no means recommend a lower number to be used for this species of game, although many go as low as No. 5. No. 6 will kill a partridge at 60 or 65 yards, or even 70. Large shots having a much smaller number of pellets in a charge, it diminishes the chances of killing, from the distances between each pellet, in the circle or disc described, which increases in circumference the greater the distance between the muzzle of the gun and the object aimed at.

For snipe-shooting no higher number than 9 should be used ; indeed, many use mustard-seed or dust-shot for this sport.

For wild-fowl shooting much larger shot must be used as it is but a rare occurrence to get within the range of any of the numbers which we have enumerated, with wild ducks, geese, and swans. For these, swan-drops, made specially for the purpose, must be used. But where there is a chance of getting near the birds, B. B., which contains 58, or B, which contains 65 pellets may be used.

The following table exhibits the number of pellets contained in an ounce of each size :—

No. 1.	82	pellets,	No. 6.	261	pellets,
No. 2.	112	do.	No. 7.	289	do.
No. 3.	135	do.	No. 8.	660	do.
No. 4.	177	do.	No. 9.	970	do.
No. 5.	218	do.			

BURSTING OF GUN-BARRELS.

Various causes contribute to the bursting of gun-barrels, and those should all be strictly considered and attended to by sportsmen.

1. Keeping the barrel perfectly clean is of the utmost importance, in not only preserving it from decay, but also as a means of preventing accidents from bursting, and the fearful

consequences which accompany such an event. A gun should never be laid aside without being washed, if even a single shot has been fired with it, as the evaporation of the saltpetre contained in the composition of gunpowder attracts the moisture, and that will attract oxygen from the atmosphere, and produce a corrosive and destructive rust. The barrel is washed out by means of a little tow or rag wrapped round the screw-end, with hot water if possible, and when well cleaned out must be rendered thoroughly dry by means of dry tow, or flannel used in the same manner. When the fowling-piece is laid aside for the season, if a perfectly dry situation can be had, it will be unnecessary to use any other means for its preservation than stopping up the muzzle with a cork, and the motion-hole with a small piece of wood; and then let it be rubbed externally once a week, or even a fortnight, with a dry cloth. If, however, a dry situation cannot be had, then the barrel and cock may be rubbed with sheep's fat or neat's-foot oil. These should be freed from the acid, which all oils contain, by means of some small pieces of lead put into the bottle, and leaving the cork out, when, if exposed to the sun, it will be found that all the feculent matter will have adhered to the lead, which must now be removed and the bottle stopped, to prevent the atmosphere from rendering it rancid, and consequently embued with acid.

2. In the operation of loading care must be taken to ram the shot home close to the powder, so that no vacuum is left intervening, otherwise the barrel may burst on being discharged. If a bullet is used which exactly fits the bore the greatest caution is necessary on this point.

3. Take care in leaping a ditch that no earth or snow accidentally fills up the muzzle of the gun, as it is almost certain to burst when discharged. It is also well known, that if the muzzle of the gun-barrel is put into water, even

for a very short space, and fired off, it will burst the barrel.

4. The utmost attention is required in the examination of a barrel before making a purchase of a piece; for although it may have been tested by the maker, it is quite possible, that the piece may be frequently fired and no accident happen, even with an imperfect barrel. But a mistake, in adding either an unusually large charge of powder or shot, may cause it to burst. Defects in barrels depend upon the circumstance of their being imperfectly welded, or any other deep flaw in the twisting; or from want of care in boring and finishing, whereby the sides may be of unequal thickness, which are more likely to be met with in pieces which are low in price.

SECTION VII.

OF FISHING GENERALLY.

INTRODUCTION.

FISHING, like hunting, was first practised by mankind as a means of subsistence, and, like other employments to which the human being is subjected from necessity, becomes wearisome and fatiguing. But such is the progress of man in society, that the avocations which he is compelled to pursue, as a means of living, become, to those who are independent of the world's toils, among their greatest sources of diversion and enjoyment.

In that condition of barbarism, which precedes civilization and the useful arts, hunting and fishing form the chief employment of the savage adventurer, who, finding in them the means of supplying his corporal wants, naturally endeavours to discover means of lessening the fatigue of procuring a plentiful and easy supply. Doubtless the methods by which mankind secured the finny tribes were originally very simple, and precarious; but after a time, and a constant application to the same pursuit, improvements would suggest themselves, and means be devised to lessen the labour, until at length the art of fishing arrived at that high state of perfection by which it is characterized at the present day; and what was reckoned in more early periods a toilsome employment, has assumed the character of a recreation to the sedentary, and an amusement to opulent leisure. To these two classes we must remark, that the pleasure of angling consists not so much in the number of fish we catch, as in the exercise of our art, the gratification of our hopes, and the reward of our skill and ingenuity. Were it possible for an angler to be sure of every cast of his fly, so that for six hours together his hook should never be drawn from the water without a fish at it, angling would be no more a recreation than the hewing of a stone, or the pumping of water.

Some vain and foolish individuals, wishing to acquire and preserve the character of expert anglers, by boasting of the number of fish which they kill, are guilty of that mean practice of buying fish of such sportsmen as have had better success than themselves, thereby giving occasion for that bitter sarcasm—the more bitter for being true—"They were caught with a silver hook."

Fishing may be divided into two distinct classes, namely, sea, and river-fishing. Each of these again is followed in two distinct manners, namely, by the net, and by the line. The former of these modes is never pursued as an amusing pastime by the true sportsman; and whether it is in the ocean or in fresh waters that he seeks that recreation, it is always with the line, either with bait or with the fly, natural or artificial.

Angling, or capturing fish by means of a rod, line, and hook, is said to have been practised 1498 years before the Christian æra. We are informed by the book of Job that he was an angler; as was also the prophet Amos. It is also said in Isaiah, chap. xix. ver. 8:—"The fishers shall mourn, and all they that cast angle upon the brooks shall lament, and they that spread their nets upon the waters shall languish." The learned Bishop Lowth has translated that passage thus:—

"And the fishers shall mourn and lament;
And those that cast the hook in the river,
And those that spread nets on the face of the waters shall languish.'

Besides the above, in Habakkuk, chap. i. ver. 15, the following passage appears:—"They take up all of them with the angle; they catch them in their net, and gather them in their drag, therefore they rejoice and are glad." Some go still further back with the commencement of this sport; but this is merely traditionary. We know, however, from authentic sources, that for many ages this has been a pastime and relaxation to many very great and learned men; and these have been extolled for their dexterity in the art of angling, as well as for the excellence of their tackle; but, however well merited this praise may have been, we are perfectly certain, that at no time of the world, nor in any country, was the fishing apparatus manufactured by Mr. John Cheek, at the sign of the Golden Perch, 132, Oxford-street, London, surpassed, if it ever was equalled. There the angler will find fishing-rods of the most symmetrical proportions and elasticity, suited to the various kinds of angling; and artificial flies, and other baits, admirably adapted for every season, fish, and stream in Great Britain and Ireland: and I speak from long experince.

THE WEATHER AND TIMES PROPER FOR ANGLING.

Upon the condition of the atmosphere, and the general state of the weather, depends the success of fishing or angling. Besides the barometer, there are many natural prognostics which will, to a great extent, guide the angler as to the proper and improper times for this pursuit. Little success

can be expected during the prevalence of northerly and easterly winds; nor when the wind is very boisterous: however, a little wind is always of advantage; so much as will produce a gentle ripple on the surface of the water; and fish always rise best to the fly after a gentle shower of rain, but not in such quantity as to colour the water too much, merely sufficient to tinge it slightly.

The best periods for fishing are from April to October, and from daybreak to nine in the morning; then from three in the afternoon until dusk, and the later the better, as excellent sport is frequently enjoyed when it is nearly dark. The days following bright star and moonlight nights are most conducive to the angler's sport, particularly when they happen to be a little windy, and overcast with clouds or flying showers; for, abstaining from food all night, the darkness of the day makes them more eager; besides, the artificial fly is not so easily distinguished by the fish. A bright and calm morning, that changes to cloudiness, without rain, and a good brisk wind, will bring the large fish on their feed; and also in stormy and showery weather, after each shower subsides, the angler will not be disappointed in his amusement. But, however favourable the seasons, if neatness in his tackle, and a proper knowledge of the various flies and baits, as well as the resorts of the various kinds of fish be wanting, he will never be so successful as those whose attention has been devoted to those objects.

When rivers are low from great droughts, and in the heat of the day, from May until September, unless shadowed by clouds, the angler will seldom if ever be successful.

In cold weather, when snow-water is in the river, accompanied by hoar-frost, either in spring or more advanced periods of the season, fish will not bite, except in the evening, should the weather prove warm and pleasant.

Immediately after spawning fish will not take bait; but in a fortnight or three weeks thereafter, when they have recovered their strength, they will bite greedily at their usual places.

Thunder and lightning invariably prevent fish from taking bait; and when summer clouds are the precursors of storms it will be in vain to attempt fishing, although the fish bit well before. And when rivers are much swollen and discoloured not a fish will be taken, as they will be dispersed in every part of the stream, and have left their usual calm haunts for such situations as they can shelter themselves, and lie so as not to be forced down by the weight of the stream.

PROGNOSTICS OF THE WEATHER.

Clouds.—When clouds move in different directions, that is, when two opposite currents are observed, especially if that next the earth flies fast before the wind, and if the weather is hot at the time, then the gathering of a thunder-storm may be apprehended.

When thin, whitish, milky-looking clouds fly swiftly through the atmosphere under those that are more dense, and when scattered clouds appear in clear weather, it is an indication of rain. And when a general cloudiness prevails, with smaller dark fragments of clouds like smoke, driving underneath, rain will shortly follow, althought it will probably not last long.

If a dense black cloud be seen in the west about sunsetting, and when dark clouds arise suddenly in that quarter, at any time, rain is sure to follow.

When clouds are formed like fleeces, dark towards the centre, and white at the extremities, with a bright blue sky about them, it may be inferred that they are of a frosty coldness, then consequently they will soon be condensed in the form of hail, snow, or hasty showers of rain, accompanied by a breeze of wind, while the showers are falling.

When every cloud rises higher than the former, and all within the range of vision appear in an increasing state, it is a certain precursor of heavy rain ; this is perhaps most remarkable on the approach of a thunder-storm : after the vapours have been copiously elevated, suspended in the sky by the heat, and are highly charged by the electric fluid, small pieces of flying clouds augment and congregate until in a short time they cover the sky, it is a certain forerunner of rain ; and on the other hand, when they dissipate, and resolve themselves into atmospheric air, it is a sure symptom of fair weather.

When clouds are streaming within the canopy, and small ones either unite or become suddenly enlarged ; or when large and assuming grotesque appearances, in the form of rocks and towers ; when watery-looking clouds envelop the tops of mountains, and small ragged and livid ones are near the sun, more particularly at its setting, they are prognostics of rain. Clouds with white summits, and livid bases, indicate thunder, and two such clouds rising on either hand foretel sudden tempests.

When clouds gather and are formed high in the atmosphere in thin white trains, like locks of wool, that proceeds from the collection of vapour, irregularly spread by contrary winds above ; and consequently wind below may be soon expected, and in all probability accompanied by rain.

Small white clouds, high in the air and light, and when the mountain tops are free from clouds, are sure indications of fine dry weather.

Wind.—When the wind veers about to several points of the compass, rain quickly follows. Some have asserted that when the wind is in this unsettled state, if it follows the course of the sun, namely, from east to west, that fine weather follows; if the contrary, foul. When the glass is going backwards it indicates rain. When the wind makes a whistling sound it is a certain indication of rain. When clouds seem to diverge from one point of the horizon, wind may be expected from that quarter, or the opposite, in some instances. Winds blowing from the north-west or north-east usually accompany dry weather. From south-east to south-west in a brisk south wind it is dry. Wind from north-west to north-east, fair; from south-east to south-west, rainy. A week's fair weather, with southern wind, drought.

Dew.—When the dew is heavy, fair weather; if it vanish suddenly or early, rain. When the dew lies plentifully upon the grass after a fine day, another fine day may be expected to succeed it; but if after such a day no dew is upon the ground, and no wind stirring, it is a sign that the vapours ascend, where they will accumulate, and must terminate in rain.

Vapours.—Where there are high hills, and the mist which hangs over the lower lands in a morning draws towards the hills, and rolls upon their sides until it covers their tops, there will be no rain.

When the morning is misty, and the fog falls, a hot day will follow; when the mist rises, rain. If mist is general before sun-rise, near the full of the moon, fine weather.

To judge rightly of the appearance of fog, it is necessary to be acquainted with the nature of the country, as in some places, if the mist hangs upon the hills, and drags along the woods, instead of overspreading the level grounds in the morning, it will turn to rain. The contrary, when it comes down from the hills and settles in the valleys.

There is commonly either a dew or a mist over the ground between an evening with a red sky and a morning with a grey sky; but if a red morning succeed, there is no dew.

If a white mist in an evening or night is spread over a meadow through which a river passes, it will be drawn up by the next morning's sun, and the day afterwards will be bright.

When a rainbow appears in the morning, rain will follow; but if in the evening, fine weather. If only a broken piece or front of a rainbow is seen, then it will rain. If the red predominates in a rainbow, wind will follow; if the green or blue, rain; appearing to the north during boisterous weather, it will be fine afterwards.

Lightning without thunder, after a clear day, is a sign of the continuation of fine weather.

Sky.—When those vapours which the heat of the day exhales from the earth are precipitated by the cold night-air, then the sky is clear in the morning; but if they still remain in the air, rain may be expected.

A dark, thick sky, lasting for some time without either sun or rain, changes to a fair, clear sky before it turns to rain.

When a lowering redness spreads far upwards from the horizon, either in the morning or evening, it is succeeded either by rain or wind, frequently by both; and when a fiery redness, with rugged clouds, extends towards the zenith in an evening, a high wind from the west or south-west, attended with rain, follows: when the sky is tinged with a sea-green colour near the horizon, when it ought to be blue, rain will continue and increase; when of a dead blue, it is abundantly loaded with vapours, and the weather will be showery.

When the canopy is high it will be fair; when low, rainy: when orange-coloured in the morning, rain; of a deep blue, fair; and of a pale blue, rainy.

In most countries of Europe the following observations have been adopted, viz., that "the evening *red*, and the morning *grey*, are sure signs of a fair day;" and it is founded upon this circumstance, that if the abundance of vapours, denoted by the *red* evening sky, descend in dew, or is otherwise so equally dispersed in the air, that the morning shall appear *grey*, a fine day may be expected from that equal state of the atmosphere.

If in a morning some parts of the sky appear of a green tinge between the clouds, whilst the sky is blue above, stormy weather is quickly approaching.

SUN.—When the sun rises orangy, rain will soon follow; rising red and fiery, wind and rain; cloudy, and the clouds decrease, and are gradually dissipated, fair weather is certain to follow; when it rises dim, drizzly showers are likely to ensue. If the sun's rays, breaking through the clouds, are visible in the air, it is a proof that the air is sensibly filled with vapours, which reflect the rays to the sight, and these vapours will soon produce rain. When there is a haziness aloft in the air, so that the sun's light fades by degrees, and his orb looks whitish and ill defined, it is one of the most certain signs of rain.

MOON AND STARS.—When the moon and stars grow dim in the night, with a haziness in the air, and a ring or halo appears round the moon, rain is at hand. If it looks red, it is a sign of wind; if pale and dim, of rain; if white and of her natural colour, with the sky clear, it indicates fine weather.

Should the moon be rainy throughout her course, it will clear up at the ensuing change, and rain will probably fall in a few days after, and continue; if, on the contrary, the moon has been fair, and at the change it rains, fine weather will in all likelihood be restored about the fourth or fifth day of the moon, and be of some duration. When the moon is bright, with sharp tips, the weather will be fair; the new moon not appearing until the fourth day, a rainy month will ensue: when the lower horn of the new moon is sullied, there will be foul weather before the full; and should it be foul in the middle, there will be storms about the full; if the upper horn be foul, there will be rain at the wane.

Virgil, the first of Roman poets, and not the last of natural philosophers, makes the following observations in his first Georgic:—

> "But four nights' old, (for that's the surest sign,)
> With sharpen'd horns, if glorious then she shine,
> Next day, not only that, but all the moon,
> 'Till her revolving race be wholly run,
> Are void of tempests."

RAIN.—Sudden rain seldom lasts long; when it comes on gradually, and the air grows thick by degrees, and the sun, moon, or stars shine more and more dimly, it is likely to continue six hours at least. Beginning with a high southerly wind, and the wind subsiding, rain for twelve hours or more will follow, and will sometimes continue until a strong north wind clears the air: rain beginning before sun-rise will end before noon: a fine day will generally succeed a shower before sunrise; beginning an hour or two after sunrise, a rainy day; setting in wet between eleven and twelve o'clock, a rainy afternoon; clearing up about twelve, the afternoon fine; cold wind after rain brings more rain; a squall of rain or hail, it may be expected to be settled fair afterwards. It has been long said that a rainy Friday is followed by a rainy Sunday, and the reverse.

ANIMALS.—Birds are provided with an oil-bag near the rump, to furnish oil for their feathers, to protect them from wet. Birds and common poultry may therefore be observed, previous to rain, to be very assiduous in distributing this oil over their feathers, in order to prepare them for resisting the wet during the approaching change.

Martins and swallows, and such birds as feed upon insects on the wing, are remarkably active previously to rain, and fly near the earth in search of their food.

Several species of insects come abroad on the approach of rain. Some other kinds of insects, such as bees especially, are shy of venturing out when foul weather is to be expected. Snails are particularly active before and after rain.

Cattle feed with remarkable avidity on the expectancy of bad weather, and retire under trees or hedges, or other shelter, as soon as they are satisfied. In settled fine weather they graze more slowly, and lie abroad, dispersed in the fields, are more careless and at their ease.

Plants.—The flowers or corolla of most plants, such as the dandelion, common daisy, and many others, close or shut up when rain is impending: this is evidently the case with the common weed called pimpernel, or burnet, which, on this account, has obtained the name of "the Poor Man's Weather-glass," The down of the dandelion is much affected by moisture in the atmosphere.

Though these phenomena have never yet been reduced to a regular system, yet from observing carefully the above prognostics, or rather combinations and coincidencies of them, very tolerable conjectures may be formed of the weather which may be expected, particularly with respect to drought and moisture. It is observation only, however, which can enable any man to form such conjectures with tolerable accuracy. The knowledge of weather is rather a practical than speculative science: to "discern the face of the sky" was an art possessed by rustics at a very remote period of society; and at this time the judgment of a shepherd or ploughman on this subject will commonly be found a more infallible guide than that of a philosopher. To the angler, and to sportsmen generally, such a study is well worthy their attention.

SOME DIRECTIONS FOR ANGLING GENERALLY.

Having equipped yourself with the necessary tackle at Cheek's, 132, Oxford-street, London, or from some of the numerous persons who sell it in all parts of the country, and having studied the prognostics of the weather which I have given, repair to the stream fixed on for your sport. Take care that you are not overheated before commencing, because, a person bathed in perspiration, however robust, may take cold, by standing by a cool river's side with a wet shirt. Be provided with a Mackintosh cover for the shoulders, and a pair of India-rubber shoes, both which may be easily carried to the starting point ; the former in the pocket, and the latter in your basket. But to those who are keen anglers, the latter will be of no use, as he will stand in the water if it is necessary, and frequently cross the stream to that side most favourable for casting the line, which, if possible, should always be *with* the wind ; but experienced fishers can throw the hook *against* the wind, if it is not too strong. But no man whatever should wade up to the waist, as this has been known to bring on fevers, that have terminated in abscesses, and endangered the loss of limbs.

When an angler arrives at a river he is unacquainted with, he should find out the eddies, which are generally at the corner of a stream, and there the large fish lie, waiting for their food which the current brings down, and which the eddy, by its circular motion, gives them time to seize. The larger will not permit the smaller fish to occupy these stations ; the latter are, therefore, in rapid, but more abundantly in placid parts of the river. It is unnecessary to remind him that he must inform himself what sorts of fish it produces, and to be suitably prepared, so as not to be abridged in his sport for want of a supply of the requisites to prosecute it, through his own forgetfulness.

If the angler, especially when fishing with the natural fly, opens the first fish he catches, and sees what it has in its stomach, which extends from the gills to the small guts, he will perceive the food the fish last swallowed, and can use the artificial fly or bait accordingly.

The following rules and cautions are necessary for all sportsmen to know :—

1. When a fish is hooked never permit him to run out with the line ; the rod should be kept bent, and as nearly perpendicular as possible, as by attention to this the top plies to every pull he makes, and prevents straining the line for the same reason.

2. A large fish should never be raised out of the water by taking the hair to which the hook is fastened into the hand, nor, indeed, any part of the line : the landing-net should be placed under him, or if that is not at hand a hat may be used. In fly-fishing, the line may be laid gentle hold of to draw the fish towards the side ; but great caution is necessary.

3. Let the fly fall first upon the surface of the water and not the line, as this will frighten the fish. The angler should always fish down the river, with the sun in his face, and the wind on his back, and keep as far from the water's side as possible, so that the line may be conveniently thrown ; because fish can see any one on the bank when they little suppose so, and even at a considerable distance from it ; because, by the refractive power of water (which any one may satisfy himself of by placing a shilling in a basin, and pour-

ing water on it, which will bring it within view without changing his position,) the fish can see any one, although not within the direct range of vision, were it situated upon dry land.

4. The south wind is best for fishing in a river which has been somewhat coloured with the effects of rain, or when the day is cloudy, or the waters are moved by a gentle breeze. If the wind blow with tolerable briskness, if there be room for conveniently using the fishing-tackle, the fish will rise in deep water which is plain ; but with very gentle breezes the best fishing will be in streams.

5. It is best to angle in clear rivers with a small fly, which has slender wings ; but when the water is muddy larger ones must be used.

6. After rain, when the water has assumed a brownish tint, use an orange-coloured fly ; when the day is clear, a light-coloured fly ; and for dark waters a dark fly.

7. The line should be twice as long as the rod ; unless where the banks of the river are encumbered with trees.

8. Watch with keen attention, and let the hand be active and ready to strike so soon as the fish rises to the fly, otherwise he will be apt to throw out the hook.

9. In still places, or slow-running rivers, cast the fly across, and allow it to sink a little in the water, and draw it gently back with the current.

10. When the angler commences fishing, the ends of the joints of the rod should be wetted, which will make them swell a little and keep them tight.

11. If it should happen that the rod is much wet with rain, or otherwise, so that the joints cannot be pulled asunder, turn the ferule a few times round in the flame of a candle, and they will easily separate.

12. When angling in a boat on a river, such as the

Thames, that ebbs and flows, the boat must be rendered steady by an anchor, or poles. Begin at flood, and continue fishing until the water has half-ebbed ; as the tide flows, fish before ; and as it recedes, follow it. Plenty of ground bait is necessary for this sort of angling, little balls of which may be squeezed round the shot above the hook, which will sink it exactly on the spot, and the least jerk of the rod will cause it to fall off, (if not too stiffly made,) and leave the bait and float in their proper position.

13. When fish bite remarkably well, observe the moon's age ; whether the night preceding was windy, dark, star or moonlight ; what kind of day as to the temperature of the air and water in which they were so eager ; the month, day, hour, and what baits or flies were most greedily taken. Similar observations upon days, when fish refuse biting, may enable the angler to draw conclusions which will, in all probability, save him many hours of wearisome expectation.

14. East winds have been always found unfavourable to all sorts of fishing, and therefore have been universally execrated by anglers. But anglers ought to consider that fish, in most waters, bite earlier in a mild, forward, than in a cold, backward spring ; later in autumn, as the weather is hotter or colder ; and both spring and fall, sooner in a warm than in a cold day ; and in sunshine better than in shade. From Michaelmas until April, in the deeps at bottom, the air clear and no wind stirring, fish bite freest in the warmer part of the day ; after April, the colder the day is fish the closer to the bottom, with your bait ; and the hotter, the nearer the top, supposing the ground not to have been baited ; but never angle following the wind up the stream.

15. The angler who uses fine tackle, or single hairs, in clean, clear, and large waters, and properly conceals himself, will take five times more fish than he who fishes with a

coarse line, and in sight, especially when the former has a reel on his rod with a running line; and if he wades in shallows and sharps, in fishing for trout. The angler should be careful to suit the footlink to the water; the rest of the line is immaterial. A reddish sorrel hair, when the water is somewhat red on the decline of the flood; a light chestnut, when the water is of a whey-colour; and a lead-coloured-hair is to be preferred when the water is of an iron hue, which it commonly is, in many rivers, when full without overflowing: an amber-coloured footlink, free from chalky-white, or knotty-specks, is best when the water is low and clear as crystal.

OF BAITS, AND THEIR PRESERVATION.

Anglers must know where they can procure and how to keep baits alive, as well as those which fish are accustomed to feed upon, which are pretty numerous.

Various sorts should be well scoured before using, to effect which purpose, and also to preserve them healthy, the following methods may be adopted; and it is worthy of remark that the lob, marsh, and red worm, will bear more scouring than any others, and are better for long keeping.

Procure a quantity of horse or cow hair, and cut it in to lengths of five or six inches, place it in an earthenware dish with a lid, and put the worms upon it. In a couple of hours they will have cleared themselves of any dirt that may have been on them. Take them out of the hair, and do not allow any of it to stick to them; and be careful to pick out such as may be dead or wounded. Clean out the dish, and put the worms into it, covering them with garden mould to the depth of a couple of inches, and moisten it every day with new milk; and let the earth be changed for new once a month.

This will prevent the growth of young worms, which would occasion the decay and death of the old ones.

Worms can also be well scoured in common moss, especially that which grows on heaths, and on stones. It should be freed from earth at the roots, then well washed and dried. Then both earth and worms should be put in an earthen pot with a cover, which should be placed in a warm situation in summer, and out of the reach of frost in winter. The more moss that is used and the oftener it is changed the better, or at least frequently washed and thoroughly dried again before it is put to them, taking care not to allow it to remain long off them, but replace it as soon as possible, as worms cannot live long, exposed to atmospheric air. There are various ways of scouring and preserving worms, but no method is better or easier than the preceding. Although worms fresh taken from the ground may serve for fishing, they are never so tough as those that are purged; nor do they answer so well as bait. But when, from necessity, worms are wanted for immediate use, and no provision has been made, nor a dealer in tackle in the vicinity, who usually keep them for sale, the quickest way to scour them is, if lob-worms, to put them all night in water; brandlings for an hour only, and both kinds must then be put, with fennel, into the angler's worm-bag.

The LOBWORM, which has the various appellations of dew, garden-worm, or the twatchel, is of two sorts; the old, which is distinguished by being knotted; the young, which is destitute of knots, and which for distinction sake, are called by some, maiden-lobs, and by others, red-worms: the latter kind, with a red head, streak down the back, and a broad tail, (from which, in some counties, they are called squirrel-tails,) is the best. Lob-worms are dug up in fallow-fields, old gardens, and by the sides of ditches and drains; but they are most plentifully found and caught in the night after heavy showers, by the aid of a candle and lantern, on grass walks and sheep pastures, where the herbage is short; and he who seeks them must move cautiously, and without treading heavily on the ground, or they will quickly retreat into the earth. For the most part they are only partially out of the earth, so that they must be drawn gently from their holes without nipping; and those that are severed are of course useless, and must be thrown away, as they would soon become putrid and infect the others. When a sufficient quantity is collected, let them be placed in an earthen pot, with moss, as above directed, after they have been dipped in cold water, to free them from the soil. Such as are not injured will soon bury themselves in the moss; but those that are injured will remain on the surface, and must next morning be picked off, as useless, and thrown away. They must be inspected every three or four days, the dead ones removed, and fresh moss laid on them, or that wherein they have been kept, well washed and picked, and the water squeezed out, at least once a week: they must be so placed, summer and winter, as to be safe from the extremity of the weather at both seasons. In a week's time they will be fit for use; and upon the angler coming home from fishing, he will return from his worm-bag into the pot those which he has not used. In observing the above carefully, they may be kept a month in summer, particularly by giving them now and then, drop by drop upon the moss, a small quantity of new milk, and the yolk of an egg well beat together, and warmed so as to thicken it. But when a stock of lob-worms is meant to be retained for a considerable length of time, a large vessel must be filled half or three-quarters full, of good mould, in the middle of which is to be placed some moss, or old coarse linen cloths, hop-sack, or rags, wetted: in hot, dry weather, clean water must be sprinkled upon the earth with a watering-pot, so as to keep them moist, but not wet; they may thus be preserved as long as is requisite, and a week before angling what are wanted may be drawn from the store and put into moss to scour themselves.

The lob-worms that, by crawling about the grass lands, have lost their holes, when they meet a drop of cow or horse dung, will creep under and there protrude, so long as it contains moisture sufficient to protect them from the intense heat. Their heads only remain about an inch out of the ground. This situation changes their colour, particularly about the head, to a dark purple, which appearance has induced anglers to consider them a distinct species, to which they have given the name of peacock-worm. In great droughts, when these worms do not approach the surface, they may be sometimes tempted to do so, by pouring plenty of water on the ground where they used to be most seen.

The BRANDLING-WORM.—This worm is girdled from head to tail in alternate red and yellow circles, is dark at the head, becoming gradually paler towards the tail. Brandlings are found in old dunghills, which consist of the dung of hogs and horses, and rotten earth; also, in old thatch and dung, and grass mown from garden walks after it has lain some time; but those which are found in tanners' bark, after being used and laid by until quite rotten, are the best, and may generally be used without any scouring. When brandlings are kept in moss, like the lob-worm, they should be fed by dropping a little cream, about a spoonful a day, upon the moss; it will prevent their swelling at the knot near their middle, which, when it takes place, generally kills them. With some anglers it is a rule not to use these worms, nor the gilt-tail, until they have been in moss two days, nor after they have continued in it more than ten.

The RED-WORMS are found in dunghills; they are small

and knotted, and of a bright red colour. They are also found in almost every heap of horse-dung that has much straw rotted in it. The *cow-dung red-worm* is found in the fields and in nearly dry flakes of dung: their heads are shiny dark-brown, with flat tails. They are very good as baits, and may occasionally be used, immediately after being taken; but are always best when scoured and preserved like other worms.

The GILT-TAILS.—These worms are paler and larger than the red-worms, are knotted like them, and of a pale yellow hue, especially towards the tail. The poet Gay, in his "Rural Sports," expresses his approbation of this gilt-tail, in the following lines:—

> "You must not every worm promiscuous use,
> Judgment will tell thee proper baits to choose;
> The worm that draws a long immoderate size,
> The trout abhors, and the rank morsel flies;
> And if too small, the naked fraud's in sight,
> And fear forbids, while hunger does invite.
> Those baits will best reward the fisher's pains,
> Whose polish'd tails a shining yellow stains:
> Cleanse them from filth, to give a tempting gloss,
> Cherish the sullied reptile race with moss;
> Amid the verdant bed they twine, they toil,
> And from their bodies wipe their native soil."

The *slender red-worm* is found in all loamy-soils, may be collected by following the plough, turning up garden-soil, and under boards, bricks, slates, stones, tiles, &c., that have lain undisturbed for any time. These four worms may be preserved together in one pot; and when the brandlings or others are meant to be used, let the angler, the evening before, pick them out by themselves, and put them into a bag, with moss moistened with white, thinnish cream, and they will appear more bright and tempting to the fish.

The White, or Marl-worms.—These worms are found chiefly in marl or clay-land by following the plough, and also in turnip-fields, where the soil is of a stiffish quality: the head is very small, and of a pale red colour: they are longer than the brandling, and naturally tough, are a good bait, especially in muddy water, and may be preserved in some of their own earth, keeping it properly damp, with some moss at top, and when scoured are of a pale white.

The Marsh-worms are middle sized and knotted; are of a blueish cast, and tender; are to be found in the rich banks of rivers, and in marshy soil, wherein they are usually got by treading on the ground when it is moist, with both feet close together, much backwards and forwards, in circles: they require more scouring in moss than most other worms, at least fifteen days, before they are thoroughly fit for use; but they are very lively, good bait.

The Tagtail-worm.—This species is of a pale flesh-colour, with a yellow tag, about half-an-inch long, on its tail: it is found in the marled lands or meadows after a shower, or in the morning, in calm and not cold weather, in March and April. In discoloured water by rain, it is considered a fatal bait for trout: they will not endure long scouring.

Gentles.—These may be procured at any time at the tallow-chandlers', and should be kept in oatmeal and bran, as bran by itself is too dry. Those who live in or near London may buy them in proper condition for the day on which they wish to use them; but for the accommodation of those who reside in the country, remote from such convenience, the best modes of breeding them will be here mentioned, to prevent disappointment. But now that postage is so cheap, baits of all kinds may be received from Cheek's, 132, Oxford Street, London, any distance within two hundred miles of London, in thirty hours, by remitting the value in postage stamps.

To propagate gentles, take any kind of coarse fish, such as chub, or roach, or a piece of bullock's liver, and lay it on an earthen pot in the shade, and it will be soon fly-blown; and gentles or maggots will be produced speedily, especially if the weather is warm. Permit them to feed until they have acquired their full size, after which pick them out, and place them in a pot, with a mixture of oatmeal and bran, and in two days they will be sufficiently well scoured and fed to fish with; in about four more days, they become of a pale red colour, assume the *pupa* or chrysalis condition, and change into a fly. The red ones, however, should not be thrown away, as frequently roach and dace will take them, as well as the white, in preference to all other baits. If gentles are bred in October, and kept a little warmer than those bred in summer, until full grown, and afterwards put in a pan, with oatmeal and bran, and placed in a damp vault or cellar, they may be preserved for winter fishing, taking care to give them a fresh supply of bran and oatmeal occasionally. Gentles are always such alluring baits, that the angler should constantly be provided with them. Trouts have been taken with them in clear water, when they have refused all other kinds of worms and artificial flies. We have found them very deadly when put on the hook of an artificial fly, which gives the appearance of the living fly to it.

CADIS, CAD-BAIT, OR CASE-WORMS.

There are several kinds of cadis-worms which are peculiar to different counties and localities; these inhabit small brooks, as well as ponds and ditches; from whence they find their way into larger rivers.

The Paper Cadis, or straw-worm, (plate xv. fig. 15,) is the longest of this kind of larvæ, and generally inhabits a case formed of two pieces of reed or rush, which at its full growth it fixes to some water-plant, and drawing it off, it appears in the larva condition, as represented plate xv. fig. 19. It inhabits the streams of northern Wales, but always those whose bottoms consist of limestone or large pebbles. It is straight and rough, from being covered with sand or gravel, and has the appearance of a small stick of which the pith was decayed before the insect, in its state immediately succeeding its exclusion from the egg, lodged itself. Advanced to a larva state, which is generally in April or the beginning of May, it leaves its case and lath covering, a sort of skin resembling a fish's bladder, (which is the way with the whole genus,) becomes transformed into its perfect condition, with four wings, and paddles upon the top of the water, from which it seldom rises to fly: in this state it is well known in England and Scotland by the name of the stone-fly, and in Wales is denominated the water-cricket.

There are several kinds of cadews, which in their maggot or larva state house themselves—one kind in straws, and called in consequence straw-worms, already referred to; others in two or more parallel sticks, creeping at the bottom of brooks; a third, in a small bundle of pieces of rushes, duck-weed, &c. glued together, wherewith they float on the surface, and can row themselves about the water with the help of their feet: both these are called cad-bait. It is a curious faculty that these creatures possess of gathering such bodies as are fitted for their purpose, and then gluing them together, some to be heavier than the water, that the animal may remain at bottom where its food is, and others to be so buoyant as to float, and there collect their sustenance. These coverings are coarse, and show no outward art; but are within well tunnelled, and have a tough, hard paste, into which the hinder part of the maggot is so fixed, that its cell can be drawn after it, without danger of leaving it behind; and it can also thrust out its body to reach the needful supplies, or withdraw into its covering for protection and safety.

The COCK-SPUR CADIS.—This bait has a strong similitude to a cock's spur, and hence its name. Its case is nicely made of small husks, gravel, and slime; and it is considerably less than the paper cadis. This is very common, and is found in many of the rivers in Surrey, and, indeed, in most others throughout Great Britain.

The RUFF-COAT is a cadis enclosed in a husk about an inch long, surrounded by bits of stone, &c., of nearly equal size and curiously compacted together, like mosaic work. The fly which emanates from this larva is of a large size, and is called in the north of England, the *large light-brown*, being of a cinnamon colour. (Plate xv. figs. 13 and 18, are sheaths of ruff-coats, and fig. 16 the perfect insect.)

The cadis flies are of several different kinds, and are plentifully diffused in almost every situation, such as pits, ponds, ditches, slow running rivers, among weeds in standing waters, among stones in the water, and particularly under them. All these are the larvæ of certain insects, and in this condition feed until they have arrived at their full size: they cannot exist for any length of time without nutriment. They should be kept in pans perforated with holes, and a regular supply of river or ditch water should be given to them every twenty-four hours.

In angling with cadis, the line, when all out, should be as long as the rod, for three lengths next the hook, of single hairs, with the smallest float, and the least weight of lead, that the swiftness of the stream will allow to sink, and that may be aided by avoiding the violence of the current, and angling in the returns of a stream, or in the eddies betwixt two, which are also the most likely places wherein to kill fish, either at the top or bottom. The cadis may be at times, with very good effect, joined to a worm, and sometimes to an artificial fly, to cover the point of the hook, and also two or three together may be put upon the hook; but it is always to be angled with at bottom, especially when by itself, with the finest tackle; and at all seasons it is a most holding bait for trout and grayling.

LARVÆ OF VARIOUS INSECTS USED AS BAIT.

The Ash-Grub, or Bark-Worm.—This grub is of a milk white hue, plump, and bent round from head to tail, with a red head. It is found under the bark of various trees, such as birch, oak, ash, or alder, especially if they are permitted to lie a year after they are felled. They are sometimes also found in the body of a rotten alder. They should be kept in bran, and great caution is necessary in the use of them, as they are very tender. In baiting, the hook must be armed with a bristle, to prevent its slipping down, and should be introduced under its head, and guided down the middle of the belly, without suffering it to break the skin in its passage, until the point of the hook comes so low, that the head of the grub may rest on the bristle, that projects to hold it; it will thus be prevented from slipping off by its own exertions; nor will the force of the stream, or quick pulling it out of the water, strip it off.

The Dock or Flag-worm.—When this worm is scoured, it resembles a gentle in colour, but is longer and more slender in its form; it is furnished with rows of feet down his belly, and has a red head. These animals locate in the roots of flags which grow by the edges of old ponds or pits. The flags should be pulled up, and the soil which is at the roots shaken over clean water, when the worms will drop into it. They inhabit small husks of a reddish or yellowish colour. These should be cautiously opened with a pin, and the worm may be used immediately, or placed in bran, and preserved in the same manner as cad-bait. They are sometimes found in the middle of the round stalk of the flag.

The LONG DOCK-WORM.—These are of a fine pale red, without knots, and are chiefly found in moist places near dock-roots, and are best taken by shaking the earth with a dung-fork. These are particularly well adapted for carp and tench fishing.

The SHORT WHITE-WORM, or BOB.—There are two kinds of worms bearing this name: the one is found in mellow, healthy, sandy soils, and is easily gathered by following the plough in autumn, when such ground is fresh broken up from grazing; also by digging one spade deep in the above-described lands sufficient may be obtained: they are double the size of the gentle. They are very soft all over, and furnished with a pale red head, and yellowish at the tail. When first taken they are of an earthy hue; but after being purged are of a pale white. They are particularly well adapted for winter bait, and are preserved by being put in a pot with earth, with rotten dry moss at the top, and kept in a warm situation.

The COW-DUNG BOB, or CLAP-BAIT, are found under cow or horse-dung in the fields when the drops are half-dry. They are of a yellowish-white, with red heads; and are best preserved by some of the earth from under the dung where they are found, and a little moss, taking care to keep them cool and moist. To render these baits tough, the best thing is to boil them for two minutes in milk, the morning on which they are intended to be used.

The WATER-CRICKET, or CREEPER.—These grubs are found by the sides of rivers, but are never sheltered in a covering of any kind. They are found under stones. They are very killing baits for trout. They continue in their larva state for about five weeks, and then change into the perfect insect; and during the time their wings are growing there is no bait more effective than this.

The PALMER-WORMS, or WOOL-BEDS.—These are small grubs, of various colours; some are rough and woolly, breeding all the summer on trees, bushes, plants, and herbs. They are found by beating and shaking the branches of oaks, crab-trees, hawthorns, and others, that grow over highways, or other bare places, where they can be most readily found after falling from the trees. These should be kept in small boxes, perforated with holes for air. They must be fed upon the bark and the leaves of the same kind of tree from which they were shaken, at least five or six times a week, removing the withered and dead leaves every time a fresh supply is given them. They should be kept cool in a garden amongst grass, or in any shaded situation.

GRASSHOPPERS, from June to September, are to be met with in many pasture-fields and meadows, especially in a hot, dry summer; but most plentifully in old, short, mossy grass: the middle-sized and greenest are the best, and may be carried in a box, with a notch cut in the edge, wide at top and narrow at the bottom, which, by lifting up the box-lid gently, just leaves space enough for the grasshoppers to creep out, which they will do separately. Some anglers take off the legs in baiting with them, but they answer better whole, if properly placed to stand on the back of the hook, and which should be entered under the head and lodged in the body. This is a fine and tender bait, and is readily taken by many kinds of fish in clear streams about mid-water, with a hook No. 6, with fine gut and one small shot. They may be preserved with grass, in the same manner as directed in the cade-worms.

Beetles.—There are two sorts of these, which are excellent for fishing; the one is of a reddish copper-colour, and the other black, and with two pairs of wings each; the upper one hard and of a husky nature, the other soft and transparent, of a bluish colour, and when extended, much longer than the hard ones: the former kind may be seen flying in warm summer evenings, in June and July, and taken in the day-time on the maple, oak, or osier. They must be placed in boxes, with air-holes, and with them some of the leaves of the tree on which they were found, and by giving them these fresh, daily, they may be kept alive for a week. The latter kind are found in the earth under fresh horse-dung, (where they retire to deposit their eggs,) by digging with a trowel; and the holes they make in the ground will direct the search. These may be kept in an earthen pot, amongst earth. Beetles vary in size; those that lurk under horse or cow-dung, three or four days after it is dropped, are the largest; but those found in old stone fences, and old potato-grounds, are to be preferred, although not so big. Both these are excellent baits for trout and other species of fish; but the copper-coloured is decidedly the best. In baiting the hook, clip off the elytra, or hard external wings, and bring the beetle with his feet towards the water. When there are streams, before the angler approaches them too near, let him begin to fish just over the bank, and advance gradually until he can fish the stream; then begin at the top, and fish it gradually and regularly down, throwing gently across it, (taking care not to whip off or damage the bait,) and allowing the baits to float quietly down the stream, sometimes just under the surface at others about mid-water, particularly in deep streams: in small rivers, which during summer are in general weedy, fish in those places where the current is strongest, and where there is an opening to get the line properly between the weeds. Try, also, over hollow banks, under and about trees and bushes, taking care always to lengthen or shorten the line, as occasion requires, and in no water pass without trial any likely haunt of fish. These remarks are applicable to all sorts of natural fly-fishing.

Ant-flies.—Ant-flies may be procured from the hills where they breed; the black are the best, and are to be found from June to September. They must be caught alive, taking care not to destroy their wings. Put some moist earth in a bottle, with the roots of the grass of the hillocks where they are found. The bottle must be closed with a piece of thin sheet-lead or tinfoil, perforated with holes, and in this way they may be kept a month. If, however, they are required to be preserved longer, place them in a vessel of earthenware, or a barrel capable of holding three or four gallons; put into it a sufficient thickness of moist earth, from three to four inches, and throw into it a quantity of roots and grass, adding from time to time some which is fresh; and in this way the ants may be kept for three or four months. In using them great care is necessary not to break the wings; and they must be allowed to drop to the depth of three or four inches from the bottom. They will be found a deadly bait for dace and roach.

Salmon's-roe.—Procure a quantity of this just before the spawning-season; let it be gently boiled, and sparingly salted. Put a layer of wool at the bottom of an earthen pot, and above it a layer of tow, repeating these alternately, until the pot is filled.

This is an excellent bait for trout, and is equally fatal to chub, grayling, and dace. In using it, a piece the size of a hazel nut should be cut off with a pair of scissors. Angle with this in the same manner as with the brandling,

Wheat, or Malt.—Let either of these be boiled gently, and slowly, for three or four hours, and then remove the husks from the malt with a penknife, and make an incision at one end, to allow the white to appear, and cut a small hole at the opposite end for the reception of the hook. This bait will answer for trout and other fish, at all seasons. Malt and wheat bait soon become sour; so that, to have them in perfection, they should be prepared daily. To entice the fish, it is a common practice to throw a few grains of this bait at the spot where the float swims.

Pastes.—Many receipts for composing pastes have been given by various writers on angling. A common one is flour moistened with the white of an egg, and coloured with vermilion. To give it consistency it is well incorporated with cotton wool, and a little butter or oil added to keep it moist. Salmon's-roe, and also shrimps, are mixed up with flour, and a variety of other substances.

DIFFERENT SPECIES OF FISH TAKEN BY THE ANGLE.

The various fishes sought after by anglers in Great Britain and Ireland may be classed under two distinct heads, namely, those which locate permanently in fresh waters, and those which live in fresh waters, but which periodically visit the sea. The former of these continue in a healthy condition without having access to salt water, while the latter cannot exist unless they perform their periodical migrations: they fall off in condition, and ultimately die. Salmon which remain in fresh water the whole year are called *kelts*, and are easily distinguished by their lank appearance. They are also called *foul fish*, not being reckoned wholesome

SUBDIVISION I.—MIGRATORY FISHES.

These spend part of their lives both in salt and fresh waters.

THE SALMON.

Whether we regard the salmon for its mercantile importance, its richness and delicacy as an article of food, or the sport which it affords to the angler, it may be considered as the king of fishes.

The salmon is chiefly an inhabitant of the northern seas, being unknown in the Mediterranean, and the rivers of other warm climates. It is found in some of the rivers of France which empty themselves into the ocean as far north as Greenland. This fish was unknown to the ancient Greeks, but was a favourite dish with the luxurious Romans.

This fish quits the ocean in autumn, forcing itself up the rivers, sometimes for upwards of a hundred miles, for the purpose of depositing its spawn in security in their gravelly beds. Intent only on the object of their journey, they spring up cataracts, and over other obstacles, which appear almost insurmountable. This extraordinary power is owing to a sudden jerk which the fish gives to its body, from a bent to a straight position. When they are unexpectedly obstructed in their progress, it is said they swim a few paces back, survey the obstacle for some minutes, motionless, retreat, and again return to the charge; then, exerting all their force, with one astonishing spring overleap every obstacle. When the salmon have arrived at a proper place for spawning in, the male and female unite in forming in the gravel or sand, a proper receptacle for their ova, about fifteen inches deep, which they are supposed afterwards to cover up. In this hole the eggs lie until the ensuing spring, (if not displaced by strong floods,) before they are hatched. The parents, however, immediately after their spawning, being extremely emaciated, return to the salt water. Towards the end of March the young fry begin to appear, and, gradually increasing in size, become in the beginning of May five or six inches in length, when they are called salmon-smolts. They now swarm in myriads in the rivers; but the first flood sweeps them down into the sea, scarcely leaving any behind. About the middle of June the largest of these begin to return into the rivers; they are now become the length of twelve to sixteen inches. Towards the end of July they are called *grilse*, and weigh from six to nine pounds each.

Fish entering some rivers much sooner than in others, the salmon in them coming into breeding condition, and beginning to spawn at an earlier period.

In rivers issuing from large lakes salmon spawn earlier, which is supposed to be owing to the waters being warmer and having been purified by deposition in the lakes; and it has been noticed that rivers, swollen by the melting of snow in the spring months, are later in their season of producing fish, and are only successfully fished when rivers which emanate from lakes are beginning to fail. Sir William Jardine has, however, ascertained that the northern rivers, with few exceptions, are the earliest to yield fish. This fact is also well known to the fishmongers of London, and other great towns. If we proceed further north, we find that the season of spawning depends upon the temperature and the latitude. We are informed by Artedi, that salmon spawn in Sweden in the middle of summer.

The variation in the spawning season in all probability depends on the warmth of the waters of the respective rivers, owing to the greater mass of water and warmer temperature of their sources, or from passing through large lakes on their way to the sea, which may cause the ova to be hatched sooner. This idea seems to be borne out by what takes place in two Scottish rivers, namely, the Oikel and Shin, in Sutherlandshire. The former of these is situated on the border of the county, and takes its rise in a small alpine lake, about half a mile in breadth : the Shin is a tributary of the Oikel, and has its origin from Loch-Shin, which is large and deep, and is connected with a series of other deep lochs. This joins the Oikel, about five miles from its mouth. Early in the spring all the salmon entering the common mouth of these rivers invariably turn up the Shin, returning to their own warmer stream, while very few pursue their course up the Oikel until a much later period.

The same kind of evidence is furnished by Dr. Heysham, in his "Catalogue of Cumberland Animals." He says, "The salmon is plentiful in most of our rivers, in all of which they spawn ; but they evidently prefer, during the winter and spring, the Eden to the Esk, the Caldew, or the Peterel. Although the Esk and the Eden pour out their waters into the same estuary, and are only separated at the mouths by a short point of land, yet there is scarcely an instance of a new salmon ever entering the former until the middle of April or beginning of May. The fishermen account for this curious fact from the different temperature of these two rivers ; the water of the Eden, they allege, being considerably warmer than the water of the Esk ; which is not altogether improbable, for the bed of the Esk is not only more stony and rocky than the Eden, but is likewise broader and the stream more shallow, consequently, its waters must be somewhat colder in the winter season. It is an undoubted fact that snow-water prevents salmon from running up even in the Eden : it is probable this circumstance may have considerable effect in preventing them from entering the Esk until the beginning of summer, when the temperature of the two rivers will be nearly the same. The Peterel joins the Eden a little above, and the Caldew at Carlisle; yet up these rivers salmon never run, unless in the spawning season, and even then in no great numbers." These are facts which all who angle for salmon should know; and attention to them in the various rivers on which they fish for salmon will be a guide to the time when good sport may be expected: a want of this knowledge may only lead to disappointment.

Salmon-fishing with the net commences on the 30th November, in the Tweed, Forth, and Tay, and ends on the 26th of August.

The chief months to angle for salmon are March, April, May, and June, although they will take a fly, whether natural or artificial, until October; but they are out of season at that time. Salmon are fished for with minnows and lob-worms, but a large artificial fly is the most killing.

Fly, No. 1.—The artificial fly for spring-fishing must be larger but not so gaudy as those used in summer. The hook should be No. 1. The feather used for representing the wings should be the darkest speckled part of the bittern's wing, stripped off from the stem, and the head of the same colour as the body, which is to be formed of the reddish-brown part of the fur of a hare, and deep copper-coloured mohair, the tail forked, with two single strips of the same feather as the wings, and a bittern's hackle over the body for legs. See plate xv. fig. 12.

Fly, No. 2.—The hook to be the same size as No. 1; the wings the mottled feather of a peacock's wing, intermixed with any fine plain dusky red; the mixture for the body, the light brown hair of a bear next the skin, sable fur, and gold-coloured mohair, gold twist, a large black cock's hackle, and a red one a little larger; and for the head, a piece of deep red mohair.

Fly, No. 3.—This fly is represented on plate xv. fig. 11; it is also mounted on a No. 1 hook; the wings are the bluish-gray feathers of a heron, intermixed with the spotted reddish part of that of a mallard or common wild-duck; the body is of lead-coloured mohair, small gold twist, a large white hackle dyed of a deepish blue; a piece of the same feather for the tail as that used for the wings; the head the same colour as the body, and the silk for wrapping of a lead-colour

The above flies are for the spring and earlier portion of the summer; but as the season advances, and the weather becomes warm, they must be dressed more gaudy, with showy and more glittering feathers, and gold and silver threads and brilliant silks. As the summer declines, less gaudy flies must be used, until they are of the hue described in No. 1. Some anglers, however, continue with Nos. 1 and 2 the whole season.

For summer flies No. 3 hooks are to be preferred, and the feathers used must be of a showy and brilliant description, such as those of the golden and common pheasant, the peacock, parrot, and trogon. Where these cannot be procured dyed feathers must be substituted, which, however, are never so brilliant in the water, and are liable to change. The blue spotted feather of the Jay's wing is also excellent for the parts under the wings.

The same sort of flies, of a smaller size, and formed on hooks Nos. 4 or 5, are used for salmon-trout; but these will frequently take the full-sized salmon-flies.

In fishing for salmon, a different mode must be pursued from trout-fishing. In the former the fly is allowed to move with the stream, while a gentle gradual motion is given by the hand to keep it upon the surface, and the angler must strike the moment the fish rises ; for the salmon will not take the fly under water ; but when they take, they break the water fairly. In a very rapid river or deep loch, the hook ought to be thick wired, otherwise the violence of the current will prevent the flies keeping any even motion, and thereby the fish will fail in seizing it when he rises ; and in a deep loch the water which the salmon forces before him when he rises will throw it on one side, and by that means the fish will also miss the fly : in moderate streams, and in waters of a medium depth, the small wire hooks are best.

The salmon being so unsteady a fish in his feeding, the season varying in different rivers, it is difficult to state the precise time at which the respective flies should be used ; but the following flies are arranged in the order in which they succeed each other. The brown fly appears in April, and may be used in many localities successfully until September ; and the grey mallard follows, and may be used for the remainder of the season. The hooks to be used are from Nos. 1 to 5, according to season, state of the water, and weight of the fish.

The Brown-fly.—The wings are constructed with the long gold-coloured feather, which is situate near the tail of the cock pheasant ; the body to be formed of the fur of a hare's neck, mixed with one-third of its quantity of the fur of a brown cow. When the weather is bright, in addition to the above, the body with twisted gold will be found beneficial, over which must be wrapped a red cock's hackle.

The Blue-fly.—The wings composed of the shaded feather of the hen pheasant's tail, and the body of a peacock's herle, with a pale red hackle over it.

The King-fisher.—Wings of the feather of a heron's tail, or that of a grey turkey; body of the greenest part of the peacock's herle, (that from about the eye of the feather is best,) over which wrap a heron's crest feather, or a black cock's hackle.

The PRIME-DUN.—The wings of light heron's feather, and the body of hedgehog's-fur, with a light dun hackle over it.

The GREAT-PALMER.—Wings made of the cock pheasant's-tail feather; the body of peacock's herle, over it a red hackle which is black at the roots. This fly is often varied with great effect by gold and silver twist

The GOLDEN-PHEASANT.—Wings composed of cock pheasant's tail feather; body of orange-coloured silk, ribbed with peacock's herle, and over it a ginger hackle.

The GREY-MALLOW.—The wings are formed of the grey feather of the mallard; the body, which is very slender, composed of white rabbit and hedgehog's fur, well mixed, and light grizzle cock's hackle over it.

In fishing for salmon with lob-worms the trolling tackle must be used, and two or three of these worms, well scoured, put on the hooks; the first should be drawn quite above the top of the shank of the large hook, and the small one run through its head; the second worm is to be run some way above the shank, and, drawing the first down, let them hang with their tails one above the other, preventing the point of the large hook from appearing through the worm, lay in the worms at the bottom of a stream, holding the rod still, and keeping as much as possible out of sight; if in a short time there is no bite, move the line gently up the current, and the worms will play, and show themselves by means of the swivels, and thus allure the salmon to take them. If no success follows after a few trials, seek another stream and there repeat them. This mode is to be adopted when either the water is too much discoloured for the artificial fly, or when the day is bright, with scarce any wind stirring, and the water so clear that the salmon can discover the deception of it: they can be taken by no other method of angling than this and weirs and minnow-fishing, when the weather and water are in such a state.

Another mode of fishing with lob-worms for salmon is to run the hook through the middle of a lob-worm, well scoured, and pull it above the shank; then take a second, and put the hook in an inch below the tail, drawing it on the hook about three-fourths of the length, the head of the worm being at its point, then draw down the first to the latter worm. A piece of lead, with a small hole through it, (which is called a plumb,) must be fastened upon the line two feet above the hook, by which means the bait can be kept in any certain spot, and pulling the line tight, the plumb will be felt at the bottom, and the bait with the link below it will be given motion to by the current: when the bait has remained a few minutes, gently move it about a yard up the stream, and again let the plumb rest at the bottom; this will excite the attention of the fish, and frequently tempts them to seize the worms.

A third way is with four or more worms, the hook to be put through three of their heads, and pull them up the line; the last should be the largest, and the hook must be thrust in an inch below the tail, and the head to cover its point; the rest of the worms upon the line are to be slipped down to the shank of the hook, but not upon it, the worms will then play around the hook in a manner the most alluring to attract the salmon. In trout-fishing this plan of fixing the worms proves very successful, and when only one worm is used the hook should be inserted at its head, and the tail left to play at the end of the hook.

In trolling for salmon with minnow or grayling, the foot-length, or links, must be about three yards, with a swivel, as well to help the bait's playing freely as to prevent the line from twisting and breaking; a large shot or two, about a foot from the bait, will keep it under water when played, and which may be either added to or diminished, according to the strength of the current, (for this kind of angling is chiefly in the streams,) and is best when water is clearing off after a fresh, or when upon the rise, before it becomes too thick. The rod must have a stiffer top than for fly-fishing, the hook large and long in the shank, with a very small one fixed above, at nearly the distance of the length of the fish with which the larger hook is baited; the bait to be drawn upon the hook like a worm, by putting it into the mouth, and bending it round the curve of the hook until it comes out a little above the tail, so as to keep the tail a trifle bent; the small hook (which should be made blunt at the point) must then be put through the lips of the fish, to prevent its slipping into the head of the larger one. Some use a leaded and others a snap-hook; but the above method is preferable. When thus prepared the line should be let out from the reel, about the length of the rod, the bait thrown across the stream, and the line drawn with a pretty brisk motion up it, which causes the bait to spin well, and entices the large fish to take it. Some anglers strike salmon as they seize the bait, but it is the surest way to let them go down with it for a time. Those who accustom themselves to strike immediately should be careful, when a salmon runs at the bait, not to snatch it away through surprise before he takes it, as is frequently done, even by tolerable anglers.

Dr. Fleming says, the favourite food of the salmon while in the ocean is the sand-eel; and Sir William Jardine says, "In the north of Sutherland a mode of fishing for salmon is sometimes successfully practised in the friths, where sand-eels are used as baits; a line is attached to a buoy or bladder, and allowed to float with the tide up the narrow estuaries. They are also said to be occasionally taken at the lines set for haddocks, baited with sand-eels. At the mouths of rivers they rise freely at the artificial fly, within fifty yards of the sea.

SALMON-FRY.

In the end of April, or beginning of May, the salmon-smolts descend the rivers into the sea, at which time excellent angling with the artificial fly may be enjoyed, when the day is favourable. They return again about the end of June, by which time they have acquired the weight of two or three pounds. It has always been the opinion of fishermen, that all the young fish, after their first visit to the sea, return to the rivers in which they were bred. This has been ascertained by experiment. A number of young fish have been taken, marked, and replaced in their respective rivers; and these have again been retaken. But that some of them do not return to the rivers in which they were bred is equally certain. Experienced fishers know well the fish of the various rivers which they have been accustomed to see, and, from what cause it is not known, many Tweed salmon have been taken in the Forth, opposite Hopetown-house, and other neighbouring parts. Probably they may have been chased by porpoises, and other marine enemies.

The flies used for salmon-fry must not be too gaudy; and sometimes the black or small red-fly, proves successful. They will take a small worm in March and April, if the weather be thick; and they are also caught with gentles. The rod should be fine, and the line scarcely exceeding the rod in length, and the lower link of single hairs; the flies must be very small, and three or four may be used, fixed at about a foot distant from each other. As the fry rise very nimbly, they deceive the eye, so that it is necessary to draw the flies rather quick upon the surface, and they will hook themselves. Gentles may be fished with in the same manner, using very small hooks, and putting a single gentle on each. The links to which these hooks are tied should not exceed three inches; for if longer they are apt to entangle the line. With the addition of the gentle we have killed fifteen dozen of young smolts in the Liffy, Ireland, in a single day.

THE SALMON-TROUT.

This fish is next in value to the salmon, on account of the excellence of its flesh. It is very abundant in most of the rivers of Scotland. It is distinguishable by the gill-cover being intermediate in its form between that of the salmon and bull-trout. The teeth are more slender and more numerous than in the salmon or in the bull-trout; those of the former extending along a greater part of its length, and indenting the tongue deeply between the two rows of teeth that are there placed, one row ranging on each side. The tail is less forked at the same age than that of the salmon, but becomes, like it, square at the end of the third year.

The salmon-trout is that which goes under different appellations in various counties. It is the white-trout of Devonshire, Wales, and Cornwall, and the sea-trout of the Esk and the Eden. They also inhabit the rivers Don, Spey, Tay, and Tweed, in Scotland; and are met with in the Sandwich, Thames, and Medway, in England. They enter the rivers early in the spring, and are in prime season from the end of April until July. The salmon-rod should be used in angling for them, the reel-line strong, and foot-length about three yards, of fine twisted silkworm-gut, or the strongest single, with the knots well whipped. When the water is clear enough, large, gaudy, artificial flies should be used; and when discoloured, well-scoured worms, with which, having a running-line, angle in or near the sides of streams, with a shot or two at the lines, about fifteen inches from the hook, which should be No. 3 or 4. This is a strong fish in its element, and therefore, when hooked, plenty of line must be given.

THE BULL-TROUT.

This fish is distinguished from the salmon and salmon-trout by the form of the gill-cover, being more acute at its lower front angle than in either of these; the teeth are longer and stronger than those of the salmon; but, like the salmon, the two or three teeth that may be seen on the vomen occupy the most anterior part only. When the fish is twelve months old its tail is square, at which time it is the whiting of the Tweed; and when more matured it assumes the name of the bull-trout; and the central rays of the tail continuing to increase in length with age, the posterior edge becomes convex, a variation in form which has obtained for the fish at Annan, in Scotland, the designation of "roundtail," when old, and the "sea-trout," when young. It is very plentiful in all the streams which empty themselves into the Solway Frith, viz., the Dee, the Urr, the Nith, the Annan, the Kirtle, the Sark, and the Esk. This trout is also occasionally met with in the Tweed; and those called the Warkworth-trout and Coquet-trout of Northumberland and Durham, are the young of this species. In the Tweed they are as plentiful as salmon. They also occur in the Devonshire and Cornwall rivers, as well as the estuary of the Severn, and some of the rivers of South Wales. Mr. Low says, it inhabits the Loch of Stenness, Orkney.

The ordinary weight of the bull-trout is fifteen pounds, but they occasionally grow to twenty pounds. It ascends rivers for the purpose of spawning, in the same manner as salmon. It affords excellent sport to anglers: it feeds voraciously, taking almost any fly or bait freely: from its great bulk it possesses much power, frequently leaping out of the water when hooked. It sometimes grows to thirty-two inches in length.

THE PARR, OR SAMLET.

This is the smallest of the British fishes which is ranked among the salmon tribe; and by many authors and anglers has been considered the fry of the salmon, while in reality it is a distinct species. It generally abounds in most rivers in which the salmon is found, which has given rise to this belief. As a proof that the parr is not the fry of the salmon, it may be taken by hundreds when the young salmon have quitted the rivers, and, indeed, during the whole summer. Even in autumn, parrs seldom exceed five inches in length, at which time no examples of young salmon can be found under sixteen or eighteen inches; and the young salmon-trout and bull-trout are large in proportion.

In the Western Islands there are streams in which parrs are common, although salmon never visit them; and although the salmon and salmon-trout frequent some of the lakes, yet parrs have never been seen in these lakes.

The parr frequents the clearest streams, and particularly those with a gravelly bottom, in which they may be found in vast shoals, in constant activity day and night. It takes any bait or fly with the greatest freedom; and hundreds may be captured when no trout, either large or small, will rise, although plentiful in the same places. An artificial-fly, with the hook baited with a gentle, generally proves very deadly; and I have taken them with three or four hooks on my line at a time, and each hook with a parr at it. The largest parr which I have seen scarcely measured eight inches; it is even rare to meet with them seven inches in length. The parr inhabits the Annan, Ribble, and Tweed, and Western Islands, in Scotland; the Thames, in England; the Laleham in Wales, and the Liffey in Ireland.

THE SMELT.

This is one of the smallest of the migratory fishes, and seems almost exclusively confined to the eastern and western coasts of Great Britain. The Frith of Forth, Solway Frith, and the Tay, are its resorts in Scotland; the Thames, the Humber, the Medway, the Mersey, the Dee, and the Conway, in England; and Dublin Bay, Ireland.

There are two modes of fishing smelts: one of these is on the sandy, shallow shores of the sea, on the eastern coast, more especially in Lincolnshire, where large quantities are taken in spring; the other is the river-fishing within the tide's-way. In the Thames and Medway they are taken with a smaller-meshed net, by permission of the Lord-mayor of London, from the 28th of August until Good Friday.

The smelt is also angled with very small fly-hooks, and in fine weather are taken very rapidly, sometimes many dozens in a forenoon. The smelt has been successfully kept in ponds, where they have propagated, and become well fed, and preserved their natural rushy flavour for which they are so remarkable. The smelt of England is the sparling and spirling of Scotland.

This fish inhabits fresh water from August until May. After spawning in March or the beginning of April, they return to the sea. The fry are found about three inches long in the month of August. They are said to feed on shrimps.

SUBDIVISION II.—FRESH-WATER FISHES, WHICH DO NOT MIGRATE.

THE COMMON TROUT.

This fish is generally diffused over Great Britain and Ireland, there being hardly a stream, lake, or river in the kingdom in which it is not found. These differ so materially in various localities, that they have been supposed distinct species. Naturalists have not, however, sufficiently determined this point. It is extremely probable that the difference in their external appearance depends in a great measure on the quality of the water, and various local situations. Not only do trout vary greatly in size, but also in colour; and weigh from six ounces to fifteen pounds.

Few fish afford more diversion to the angler than trout, or require more skill to take them, as they are at all times very cautious; and when the water is either low or clear, it will be in vain to attempt to catch them, as they then retire under banks and roots, refusing to rise either to the fly or bait. During the day the larger-sized fish move but little from their accustomed haunts, but towards evening, and during the night, they rove in search of small fish, insects, and their various larvæ, upon which they feed with eagerness. The young fry may be seen throughout the day, sporting in the shallow, gravelly scours of the stream, where the want of sufficient depth of water, or the greater caution of larger or older fish prevent their appearance.

In a cloudy day, after a gentle shower of rain, when mills are going, trout will freely take minnows, worms, and flies of all kinds in their proper season: in March and April they should be angled for with the worm in the forenoon, and with a fly or minnow, according to the state of the water, for the rest of the day: in the swiftest and sharpest currents, provided the day be warm and bright, and in the deeps, early and late; but if the water be discoloured, try the gravelly shallows, near the sides and tails of streams, with a worm only, to run on the bottom, with one large shot at least a foot from it. When there is a small fresh, or the water is clearing off, and is of a dark brownish colour, first use the worm, which should be a well-scoured brandling, cast in as a fly at the head of the stream, and moved gently towards you, still getting it to go down with the current, so as to keep it a little under water: the line should be rather short, with no lead upon it, and the hook fine; then use minnow, real or artificial, and as the water clears, artificial flies.

When the water is clear and low in sultry weather, if the trout will take at all it will be with beetles, blue-bottle, palmer, cud-bait, wood-fly, earth-bab, and the like.

" The Thames, at various places," says Mr. Yarrell, " produces trout of very large size. Among the best localities may be named Kingston, opposite the public-house called The Angler; Hampton-court bridge and wear, and the wears at Shepperton and Chertsey. These large trout are objects of great attraction to some of the best London anglers, who unite a degree of skill and patience rarely to be exceeded. The most usual mode practised to deceive these experienced fish is by trolling or spinning with a small bleak, gudgeon, or minnow; and trout of fifteen pounds are occasionally taken."

The trout generally spawns in the month of October, and may be said to be in season from March to September. In March, or if mild weather, trouts begin to leave their winter-quarters, and approach the shallows and tails of streams, where they cleanse and restore themselves to health; as they acquire strength they advance still higher up the rivers, until they fix their summer residence, for which they generally choose an eddy, behind a stone, a log, or bank that projects over the water, and against which the current drives. In small rivers they generally lie under sedges and weeds, especially in the beginning of the year. They feed in the swiftest streams, and are often found at the upper end of mill-pools, at locks, flood-gates, and wears; also under bridges, or between two streams running from under their arches; and likewise in the return of streams where the water seems to boil: in the decline of summer they lie at mill-tails, or the end of other streams, and in deep water.

THE GREAT GREY TROUT.

This is also termed the great lake-trout, and inhabits Loch Awe, Perthshire, in the highest perfection. It is also found in Loch Laggan, the upper end of Loch Shin, Lochs Loyal and Assynt; it is said also to occur in Orkney and Shetland. It is the same species that inhabits Ullswater, Cumberland, and Lough Neagh, Ireland.

This trout does not rise freely to the artificial fly; they are taken generally by night-lines, and are not difficult to capture by strong trolling-tackle, baited with a small trout. They are extremely voracious; and having seized the bait, they will allow themselves to be dragged by the teeth for forty or fifty yards, and when accidentally freed will immediately seize it again. The usual mode of fishing for it is from a boat, which is rowed gently through the water. The small trout used as a bait must be guarded by six or eight large hooks; the rod and line should be of great strength, for this fish has even more power than a salmon of the same size, although not so active. Young fish, from one to two pounds, will rise freely to the ordinary trout-flies.

The great trout is almost exclusively confined to the lochs, seldom being seen in any of the streams communicating with them, and never descending to the sea. It spawns in September. They have been known to grow to the length of thirty-five inches, and to weigh thirty-six pounds. Dr. Heysham mentions in his "Catalogue of Cumberland Animals," some specimens of this trout from Ullswater, which weighed between fifty and sixty pounds.

THE WELSH CHARR.

This fish is easily distinguished from the large size of its fins, and its general form, resembling an adult parr from the Tweed. It is called the torgoch, or red-belly, in Wales, and inhabits the Llanberris Lake, and Llyn Cawellyn, two deep lakes situated on the east and west sides of Snowdon. They rise well to artificial flies.

THE NORTHERN CHARR.

This species inhabits the northern lakes of England, namely, Keswick, Crummock Water, Buttermere, Windermere, and Coniston; various lochs in Scotland; also in Loughs Esk, Egish, Neagh, Don, and Luggelaw, in Ireland. It frequents the deepest parts of those lakes, from which it affords but little amusement to the angler. The most successful mode of fishing for them is to trail a very long line after a boat, with a minnow for a bait, with a large bullet of lead two or three feet above the bait, to sink it deep in the water. By this means a few may be taken in the beginning of summer, at which time they are in perfection. In fishing for trout where the charr inhabits they are occasionally taken with the fly, but this rarely happens.

THE GRAYLING.

The grayling is a local fish although it abounds in some streams. It locates in the Test, in both the Avons, in Hampshire and Wiltshire; in the Dove, the Lug, the Wye, and the Irvon, Herefordshire; the Teme, and the Clun, Shropshire; the Hodder, the Dove, the Trent, and the Wye, Staffordshire; the Dove, Derbyshire; the Dee, Merionethshire; the Ribble, Lancashire; the Ure, the Wharfe, and the Wiske, Yorkshire; and has been occasionally taken in the Eden, and the Esk, Cumberland. This fish thrives best in rivers with gravelly and rocky bottoms, and requires an alternation of stream and pool.

The grayling has been known to live in ponds, and even to thrive in them. The spawning season is in April, or the beginning of May, differing in this respect from all the other *salmonidæ*, almost all of which spawn towards the end of the year, and generally in cold weather. It is, however, always in its best condition in October and November, at which time trout are out of season. The general length of the grayling is from ten inches to a foot, although it frequently grows much longer. Specimens have been caught in the Avon sixteen inches long, weighing four pounds; and one was killed in the Test, near Shrewsbury; which weighed five pounds.

This fish feeds much at the bottom on the larvæ of the dragon-fly, and ephemera, and small shells of the genera *Physæ* and *Neritina fluvistilis*. Imitations of the first two of these have been very successfully used by anglers. They will take all the flies that trout are fond of; they rise bolder than the trout, and if missed several times, will still pursue; yet, notwithstanding they are so sportive after the fly, they are an inanimate fish when hooked, and the sides of the mouth are so very tender, that unless nicely treated when hooked, the hold will frequently be broken. In September they retire in shoals to the lower end of still holes, just where the water becomes shallow, where they will take an artificial fly at the top, which should be small; the camlet-fly is perhaps the best, and the hook No. 7 or 8.

When the water is not proper for flies, and they are angled for below the surface, let gentles be used. Wasp-larvæ, or worms, and other insects, which inhabit cases, as well as cad-bait, are eagerly taken by the grayling. Let the bait sink as near the bottom as possible, and fish with two or three hooks, with gentles on each, and angle with them in the same manner as with artificial flies. Other anglers practise dragging these on the ground, as the grayling will rather take it there than ascend to do so, and use a running-line; while others prefer a cork-float, insisting that the grayling is more apt to rise than to descend.

THE PERCH.

The perch differs from all other fresh-water predatory fishes, in being gregarious, and swimming in shoals; and are so voracious as to attack their own kind. In this country this fish seldom attains a large size, their general length being from ten to sixteen inches; and these dimensions are full-sized. A few solitary instances have occurred of much larger ones being caught in Britain; one is said to have been taken in the Serpentine River, Hyde Park, London, which weighed nearly nine pounds; and one of eight pounds was caught in Dagenham Breach, eight pounds weight; and one was taken near Oxford, twenty-nine inches long, and deep in proportion.

Perch are found as well in clear, swift rivers, with pebbly, gravelly bottoms, as those of sandy, clayey soils; they prefer water moderately deep, and frequent holes by the sides of or near to gentle streams, where there is an eddy; the hollows under banks, among roots of trees, piles of bridges, or in ditches and the back streams that have communication with larger rivers. Ponds, which are fed by a brook or rivulet, are favourable receptacles for this fish, and they feed very fat in them. In such situations their haunts are chiefly deep holes, between weeds, or stumps of trees, or on gravelly scours. The perch spawns in the end of April or beginning of May.

Angling for perch affords great diversion, not only on account of the variety of baits, but also the modes of using them. Of worms, the best kinds are small lob-worms which have no knot, brandlings, red-dunghills, or those found in rotten tan, all well scoured ; the hook may be varied from No. 2 to 6, being well whipped to a strong silkworm-gut, with a shot or two a foot from it ; put the point of the hook in at the head of the worm, out again a little lower than the middle, passing it above the shank of the hook upon the gut : take a smaller one, beginning the same way, and bring its head up to the middle of the shank only, then draw the first worm down to the head of the latter, so that the tails may hang one above the other, keeping the point of the hook well covered. This is the most enticing method that can be adopted in worm-fishing : use a small cork-float, to keep the bait at six or twelve inches from the bottom, or sometimes about mid-water : in angling near the bottom, raise the bait very frequently from thence almost to the surface, letting it gradually fall again. Should a good shoal be met with, they are so greedy that they may be all caught, unless one escapes that has felt the hook, then all is over ; the fish that has been hooked becomes restless, and soon occasions the shoal to leave the place. Two or three rods may be employed, as they require time to gorge sufficient to allow the angler to be prepared to strike them. To draw a shoal of perch together, three or four balls of stiff clay should be procured, and holes made in them; one end of a lob-worm should be put into each hole, and the clay closed fast upon them, and then thrown into the water a yard or two distant from each other: the worms being alive in the balls, by the moving and twisting about, tempt the fish to feed upon them; but the angler's worms being of a superior kind, they will, on sight of them, leave those in the clay, and seize with eagerness the others. Not perch only but many sorts of fish are collected by the ground-bait, so that at times the gentle and other baits may be tried.

In a bad day, when the perch will not be brought on feed, take off the float, and extend the line as long as the rod will throw the bait out, without injuring it; cast it in all directions, sometimes across, at others up or down the water, drawing the bait towards you, and playing it with a similar motion as in spinning minnow. Do not try long on one spot, when a fish bites, slacken the line and give time for striking: this often succeeds in bad weather, when all other methods fail; but more especially in a rough southerly or westerly wind.

If the angler roves with a minnow, let it be alive, and the hook stuck in under the back fin, or through the upper lip; let the minnow swim in mid-water, or rather lower; use a cork float of a size that he cannot sink it under water, with a few shot, about nine inches from the hook, to keep him down, or when tired he will rise to the surface. When using the frog, put the hook through the skin of its back, and it will swim easier than if the hook were thrust through the skin of its hind legs. Recollect to keep this bait as far from the shore as possible, for he will constantly be making to it; always give line enough at a bite, to let the perch gorge. May or June are the best seasons for perch-fishing, as they are then prowling about in search of the young fry of dace, roach, and other fish. Where pike are suspected to haunt, the hook should be fixed to gimp; as, in this manner of fishing, they will take the bait as well as the perch.

Some anglers use minnows, as in the dead snap for pike, with three fine guts twisted together, or a piece of small gimp, to which the hook is tied; the baiting-needle must be shorter, the wire of it small, and the minnow exactly baited as a dace for pike. By this mode there is a greater certainty of hooking the fish, as all fish of prey seize their food by the middle; when the hooks are thus placed, they are more sure than the common method with a large hook, and a smaller above it. The way of using the latter is, to a hook No. 3, tie a link of gut or fine gimp; at about three-quarters of an inch above it, tie a hook No. 9, this should be one of those called lip-hooks, adapted to the sole purpose of keeping the minnow in its proper position. Join this link, which should be eight inches long, to another, by a small swivel closed at the ends, fastening a small lead weight (shaped like that directed to be used in the dead-snap for pike) about an inch above the swivel; these swivels are to be fastened to the links with fine double silk, well waxed, and the end of the upper link formed into a noose, to fix it to the line. The point of the large hook is to be put in at the shoulder of the minnow, and down as far as the bend of the hook will permit, bringing the point out so that the tail may be a little curved with the bend of the hook, which will cause it to spin better; fasten the head with the small hook, by running it through the middle of the bottom, and out at the top of the upper jaw. The only recommendation to this plan, is the readiness of baiting the minnow; the other being unquestionably the best for hooking the fish which bite at it. Other baits for perch are loaches, sticklebacks with the spines cut off, miller's-thumbs, and horse-beans, boiled.

THE TENCH.

Still waters are the favourite haunts of the tench, where they lie concealed among the reeds of rivers, or in places shaded by heather or bushes. They thrive best, however, in standing waters, where they lie under weeds, near sluices, and at pond-heads. They are much more numerous in pools and pits than in rivers, although those taken in the latter are far preferable in point of taste. The tench begins to spawn in June, and may be found spawning in some waters until September; their best season is from that period until the end of May.

The tackle in angling for tench should be strong; a swan or goose-quill float, except in rivers, where the cork is always to be preferred; the hook No. 4 or No. 6, whipped to a sound silkworm-gut, with two or three shot, ten to twelve inches from it. Where there are weeds, fish about two feet deep, at mid-water, and sometimes rather lower, according as the fish are in the humour to take, frequently drawing the bait gently towards the surface, and letting it sink in the slowest manner; bait with the small red worms, as directed in perch-fishing, and let the bait be six inches from the ground, but where the mud is so deep as to cover the clay balls when sunk, keep to the former method, and entice the fish by bits of lob-worms. When using gentles, (which should lie near the ground,) throw in some at the taking of every fish, which will induce them to bite, and be the means of keeping them together; they should be allowed time in biting, before they are struck.

In tench-fishing some use the middle-sized bob or marsh-worms, previously ground-baiting the place with lob-worm and boiled malt, and fishing at bottom. Other baits for this fish are wasp-larvæ, earth-bob, green-worm shaken from the boughs of trees, paste of brown bread mixed with honey, and of white bread in which a little tar is incorporated; the best time for angling is late in the afternoon or early in the morning. When the weather is warm, foggy, and misling, with a southerly wind, the tench will bite during the greater part of the day. Tench will live long out of water, and may with safety be removed in dry straw to a considerable distance.

Tench prefer foul and muddy water, and are frequently taken out of situations where they have been literally dyed black with foul and fœtid mud. The size of an ordinary fish is from three to four pounds, and they are often met with five pounds weight. One of extraordinary dimensions was found in a piece of water, ordered to be cleaned out, at Thornville Royal, Yorkshire, November, 1801. After the pond was thought to be quite free, under some roots there seemed to be an animal, which was conjectured to be an otter; the place was surrounded, and on opening an entrance among the roots, a tench was found of most singular form, having literally assumed the shape of the hole, in which he had of course for many years been confined. His length from fork to eye was two feet nine inches; his weight, eleven pounds nine ounces and a quarter. The colour was also singular; his belly being that of a charr, or a vermilion. This extraordinary fish, after having been inspected by many gentlemen, was carefully put into a pond; but either from confinement, age, or bulk, it at first merely floated, and at last, with difficulty, swam gently away. It lived long afterwards.

THE PIKE.

The pike is the most voracious fish which inhabits the fresh waters of Great Britain and Ireland. It is found in many of our rivers and standing waters, at least those of any extent. It loves a still, shady, unfrequented water, with a sandy, clayey, or chalky bottom; and grows to a larger size in pools than in rivers. From May to the beginning of October it usually finds out a retreat amongst or near flags, bulrushes, or water-docks, and particularly under the *ranunculus aquaticus,* or water-ranunculus, especially when in flower, and which floats on the surface. Pikes will sometimes be found in the termination of sharp currents. From March to the end of May, they resort to back-waters that have direct communication with the main stream; and as winter approaches they retire to the deeps, under clay-banks, bushes impending over the water, stumps and roots of trees, piles of bridges, and flood-gates. They spawn in March or April, according to the coldness or warmth of the weather, quitting the rivers for creeks and ditches communicating with them, and dropping their ova on the grass and reeds. In ponds they choose the reeds and shallows for depositing it. Ducks and other wildfowl eagerly devour the spawn, and by them it is transported to other waters. The appearance of pike in ponds, where none were ever put, has been deemed as extraordinary as its asserted longevity; it is, however, easily accounted for upon the well-known principles of the generation of fishes. If a heron has devoured their ova and afterward ejected them, while feeding in one of these ponds, it is highly probable that they may be produced from this original, in the same way as the seeds of plants are known to be disseminated.

The longevity of the pike is truly remarkable, if credit may be given to the assertions respecting it.

Rzaczynski speaks of one ninety years old; but Gesner's pike that was taken near Hailbrun, in Swabia, in 1497, with a brazen ring, denoting that from the hands of the governor of the universe, Frederick the Second, he was put into that lake in 1230, places the former almost in a state of infancy, and is said to have weighed 350 libs.

Pike has always been remarkable for extraordinary voracity. Mr. Jesse says, "Eight pike, of about five pounds weight each, consumed nearly eight hundred gudgeons, in three weeks; and the appetite of one of these pike," says Mr. Jesse, "was almost insatiable. One morning I threw to him, one after another, five roach, each about four inches in length; he swallowed four of them, and kept the fifth in his mouth for about a quarter of an hour, when it also disappeared." Digestion in the pike goes on rapidly, and they are, therefore, a most expensive fish to maintain. In default of a sufficient quantity of fishes to satisfy them, moor-hens, ducks, and indeed any animals of small size, whether dead or alive, are constantly consumed; their boldness and voracity are equally proverbial.

Among the various localities in England for both the quality and quantity of their pike, may be mentioned Horsea Mere, and Higham Sounds, two large pieces of water in the county of Norfolk, a few miles north of Yarmouth. Mr. Yarrell says, "I am favoured by a gentleman of acknowledged celebrity in field-sports, with the returns of four days' pike-fishing with trimmers—or liggers, as they are provincially called—in March, 1834, in the waters just named, viz.: on the 11th, at Highham Sounds, sixty pike, the weight altogether two hundred and eighty pounds; on the 13th, at Horsea Mere, eighty-nine pike, three hundred and seventy-nine pounds; on the 18th, again at Horsea Mere, forty-nine pike,two hundred and sixty-three pounds; on the 19th, at Higham Sounds, fifty-eight pike, two hundred and sixty-three pounds; together, four days' sport, producing two hundred and fifty-six pike, weighing altogether eleven hundred and thirty-five pounds. Pike have been killed in Horsea Mere, weighing thirty-four pounds." These two lakes are calculated to include an extent of six hundred acres.

Mr. Yarrell describes the trimmer thus: "It is a long cylindrical float, made of wood or cork, or rushes tied together at each end; to the middle of this float a string is fixed, in length from eight to fifteen feet; this string is wound round the float, except two or three feet, when the trimmer is to be put into the water and slightly fixed by a notch in the wood or cork, or by putting it between the ends of the rushes. The bait is fixed on the hook, and the hook fastened to the end of the pendant string, and the whole then dropped into the water. By this arrangement, the bait floats at any required depth, which should have some reference to the temperature of the season; pike swimming near the surface in fine warm weather, and deeper when it is colder, but generally keeping near its peculiar haunts. When the bait is seized by a pike, the jerk loosens the fastening, and the whole string unwinds; the wood, cork, or rushes, floating at the top, indicating what has occurred." This mode of fishing, however, is rather a mechanical one, and not such as would be preferred by the true sportsman.

For trolling, the rod should be twelve or fourteen feet long, but with a strong top for this fishing, with a ring at the end for the line to run through; this may be fitted to a fly or general rod: there should be one ring upon each joint to conduct the line, which is better than a greater number. They should be set on straight, that it may run freely, so that no sudden check, after the bait is taken, may prevent the pike from gorging it. The line should be of silk, with a swivel at the end to receive the armed wire or gimp, and at least thirty yards long, wound upon a winch or reel, fixed near the butt-end of the rod. The best baits are gudgeons or dace, of a middling size: put the baiting needle in at the mouth, and out at the middle of the tail, drawing the gimp and hook after it, fixing the point of the hook near the eye of the fish; tie the tail to the gimp, which will not only keep it in a proper position, but prevent the tail from catching against reeds and roots in the water; thus baited, the hook is to be fastened to the line, and dropped gently in the water, near the sides of the river, across the water, or where it is likely pike resort. Keep the bait in constant motion, sometimes letting it sink near the bottom, and gradually raising it. The angler need not make more than two or three trials in one place, for if a pike be there, he will, within that time, bite, if he means to do so. When the bait is taken, if at a depth too great to see, it will be easily ascertained by the line being drawn tight, and by some resistance. Let the pike have what line he chooses, it will be soon known when he has reached his harbour, by his not drawing more; allow about five minutes to elapse, so that he may gorge the bait; then wind up the line until the pike is seen; (which he frequently permits, though he has not gorged the bait;) should the bait be across his mouth, give more time; but if he has swallowed it, manage him with a gentle hand, keeping him, however, from roots and stumps, as the line may there get fastened. In clear water veer out line until he is sufficiently tired, and a landing-net can be used; but by no means, however apparently exhausted, attempt to lift him out with the rod and line only, for the moment he quits the water, he will open his mouth, and from his own weight tear the hook from his stomach, and the fish will be lost.

In trolling, the bait should never be thrown too far; in small rivers, the opposite bank may be fished with ease, and the violence of the fall of the bait upon the water in excessive throws, soon spoils it, by rubbing off its scales, and alarms the pike instead of enticing him. In some places pike are taken by what is termed dipping; the hook used is a long-sized gorge, very slightly leaded on the shank, and baited as in trolling, only the mouth is to be sewed up, and the back fin cut away, and then looped to the swivel; the line is let out from the reel to a convenient length, and the bait is dropped in any small openings where the water is not very deep, nor overspread with docks and weeds. The fish hanging with his head downwards, will, when gently moved (and all baits, especially dead ones, should be kept in constant motion) shoot and play about the weeds so naturally, that the pike will be eager in taking it this way, even from the surface. When the bait is seized, the line is to be slackened, and the pike allowed line to run; in a short time it will be perceived to shake, which is a single strike; when hooked he must be cautiously managed, winding up the line gradually; in getting the pike through the weeds, endeavour to keep his nose above them, and use the landing-net in taking him from the water. In this method, the baits must be as fresh as possible. We have given a representation of the gorge-hook, baited, plate xvi. fig. 1.

March is the best time for snap-fishing, the pike being then very shy of gorging, although they seize the bait with seeming eagerness. The rod should be twelve feet, and purposely made for it. Those expressly manufactured for pike fishing, by Mr. John Cheek, 132, Oxford-street, London, are the best we have seen; and his newly-invented rod, containing *four* in *one*, is invaluable to those who go a distance from home, and especially to travellers. It answers as a fly-rod for spinning, bottom-fishing, or trolling for pike; and is made of the best seasoned hickory, in five joints, with the various tops, winch fittings, socket, spear, landing handle, and partition bag, finished in the best manner and warranted, for the low sum of twenty-eight shillings. Indeed long experience has taught us that Mr. Cheek's tackle, generally, cannot be exceeded for excellence of workmanship, and moderate prices.

For the live snap, no hook is so proper as the double spring hook, which we have represented plate xvi. fig. 4. This is the snap when set; fig. 5, shows it sprung; and fig. 7, the same, baited. To bait it, nothing more is requisite than to hang the fish to the small hook, under the back fin, which may be done with so little injury to the fish that it will live for hours. In all modes of pike-fishing, gudgeon is the best bait, and next are dace; they must be kept alive in a tin kettle, with holes in the lid, and which in hot weather should be placed in the water.

The other live snap-hook is baited by the small hook being thrust through the fish beneath the back fin; and some use a piece of silk or thread doubled, hung on the point of the small hook, and brought under the belly of the bait, and tied on the other side of the shanks of the large hooks; care and expedition are required in doing this, otherwise the bait will be injured, and be incapable of swimming in the water briskly. A cork float, the size of a burgamot pear, with a small pistol-bullet of a quarter of an ounce in weight, not only to poise, but also to keep the bait a proper depth in the water, must be used, varying from two to three feet. When the float is drawn under, allow it to be sunk considerably before striking, which in all snap-fishing should be with a smart stroke, and directly contrary to the course the pike appears to take; the line must be kept tight, and the landing-net should be used, as the throwing out of a large pike by force, will certainly strain the sockets of the rod.

A variety of hooks are used for the dead snap; those we have represented in plate xvii. fig. 1, is the dead snap, with four hooks baited; fig. 2 represents the arrangement of the hooks for the dead snap, when four are used. Fig. 9 shows the manner of placing the three-hook dead snap; and fig. 10 the hooks baited. These are well adapted for both shallow and deep waters, as well as to the still and rapid parts of a river; and will take pike at all seasons of the year, if the water and weather are favourable; and it will be no trifling recommendation, that the idea of cruelty, which the use of a live fish naturally impresses, is, by this substitute, completely removed. The rod should be longer than for trolling; the line fine, strong, and twenty yards in length. The hook which is most generally preferred, is like that of the common live snap, plate xvi. fig. 8; the length of the gimp on which the hook is tied, should be regulated by the size of the bait, and ought to be rather longer than the distance of the back fin to the mouth; that the looped end may be hung on a strong swivel, tied neatly to about a foot more of gimp, with a noose at the other end to hang it upon the line, fastening a piece of lead of the shape of a barleycorn, and weighing about an ounce, with a hole through it, two inches above the swivel. The bait should be a middle-sized dace. Insert the baiting-needle (see plate xvii. fig. 11) close behind the back fin, letting it come out at the mouth; draw the gimp, to which the bait is tied, after it: the short hook must be placed with the point upright behind the back fin, the others will be, consequently, at each side; then hang it upon the swivel, and try if it will spin; if it does not, move the bait a little to the right or left: (which may be done without removing it from the hook:) the whole success depends on its quick turning when drawn against the stream, and when it does, it appears like a fish unable to escape, and becomes too tempting a morsel for the pike to resist. This method will not only enable the angler to fish a greater extent of water than the others, but is more certain to secure the pike. The large ones, although bold in seizing the bait, are very cautious in gorging it: most trollers have experienced that after running out a considerable length of line, the bait has been mumbled to pieces and deserted; a disappointment here remedied, for a pike has but to seize the bait, and he is caught.

At both troll and snap some persons have two or more swivels to their line, by which means its twisting is prevented, the bait plays more freely, and to the dead bait in rivers it certainly is an improvement; in ponds or still waters one will answer the purpose.

Pike may also be taken with an artificial fly; the best is made of the peacock's, pheasant's, and mallard's feathers, like the large salmon-fly, and the more gaudy the better. With a common fly a pike was caught in Loch Ken, near New Galloway, in Scotland, which weighed seventy-two pounds. The skull is preserved at Kenmore Castle, which is certainly the largest pike ever seen in Great Britain.

The pike-fly must be made of a large size upon a double hook, fastened to a good link of gimp, with a show of body, formed rough, full and round, with the wings not parted; but standing upright on the back, and smaller feathers continued thence down the back to the end of the tail, so that when finished they may be left a little longer than the hook, and the whole to be nearly as large as a wren. A fly of this kind has been known to entice pike when no other baits were of any avail, especially when the days were dark and windy. This fly must be moved quick when in the water, and kept on the surface if possible. Flies of this kind, and various others for pike, are to be had at Mr. Cheek's, 132, Oxford-street, London.

Pike are also taken with a live bait, fixed to a certain place, called ledger-bait.

THE CARP.

Carp is a naturalized fish, but by whom and at what time is not accurately known. Leonard Mascall, who lived in 1600, takes to himself the credit of introducing this fish; but we have sufficient proof of its existence in England long before that time, as Wynkyn de Worde printed the celebrated "Boke of St. Albans, by Dame Juliana Barnes," in 1496, wherein the carp is expressly mentioned.

The carp is a native of Polish Prussia, and abounds in the rivers and lakes of that country, where it grows to a great weight. Carp are known to live to a great age; one mentioned by Gesner lived to the age of one hundred.

In this country the carp inhabits ponds and lakes, but seems to prefer the latter, and locates in parts where the current is not too strong, and thrive best on soft and muddy bottoms; but they breed best in ponds and lakes, and spawn in the end of May or beginning of June. They grow to the weight of three pounds in six years, and six pounds in ten years. Mr. Daniel mentions that "Mr. Ladbroke, from his park at Gratton, presented Lord Egremont with a brace that weighed thirty-five pounds, as specimens to ascertain whether Surrey could not vie with Sussex carp."

Carp are not easily taken by angling: a person may be successful one day, while he will hardly kill a fish the next. They are in season from October to April.

No fish is more wary than carp, and when aged are very difficult to take, although small ones will bite eagerly: the rod should be strong, and the place intended to be fished should be ground-baited the previous night with grain, or worms cut in small pieces, incorporated with clay. The hooks used in angling should be red worms taken out of tan, flag or marsh-worms, green peas, so boiled as to soften but not to break the skin, and thrown in now and then. The baited hook should float about a foot from the ground, and as soon as a bite is felt, strike immediately, and when struck, the fish swims off to the opposite side of the pond or river. Some use two hooks, one a foot and the other ten inches from the bottom. The best time for fishing is from daybreak to eight in the morning, and from sunset until dark.

There are three species of carp in this country, viz., the *common*, the *crucian*, and the *curassius* of naturalists, the latter known by its greater depth.

THE BREAM.

The bream thrives best in large pieces of water, and in the deep and still parts of rivers which run slowly. They are abundant in the lakes of Cumberland and some of the Irish loughs, where they grow of great size, and attain the weight of twelve or fourteen pounds.

Although the bream yields good diversion to the angler, its flesh is considered insipid, and is not in much estimation for the table. It is, however, by some reckoned of easy digestion, and more nutritive than the carp. What renders it unpleasant for the table is the number of bones; and the best way of preparing it is by pickling it, like salmon. The French esteem this fish highly, and proverbially say, "He that hath breams in his pond is able to bid his friend welcome."

The baits used in angling for bream are the red paste, gentles, wasp-grubs, flag-worms, and red-worms; when the common red-worm is used, the hook should be baited with two small ones at a time. Green flies and grasshoppers may be used in June and July. When a fish is hooked and played near the surface of the water it is not uncommon to see a number follow him, and as soon as the hooks are fresh baited, they will also take greedily.

THE ROACH.

The roach inhabits many of our deep rivers, and is gregarious, keeping in large shoals. They migrate to the higher parts of rivers for the purpose of depositing their spawn in the end of May or beginning of June. The ordinary weight of this fish is from one to two pounds. Three pounds is an extraordinary weight, although Pennant refers to a roach of five pounds weight.

In fishing for roach, it is a common practice to throw in crumbs of bread to attract the shoals to the spot, and then angle with a hook baited with a large gentle; and when maggots are not to be had, some use greaves from a tallow-chandler's, which must be prepared by cutting them in pieces of about a quarter of a pound, and putting them in cold water, then placing the vessel on the fire, where they must remain until near the boiling point, by which time they will have become white and soft; the whitest is to be reserved for baiting the hook and the rest used as ground-bait for enticing the shoals. The hook should be No. 6, and the bait allowed to sink to about an inch from the bottom. If a full-sized roach be hooked, he should be played, for they struggle much; and although many accustom themselves to a single hair line, yet when the fish run large it is not always to be depended upon.

THE CHUB.

The chub locates in rivers whose bottoms are sand or clay, or which are bounded by clayey banks. It is common in many of the English rivers, such as the Thames, the Wye, in Wales, and the Annan, in Scotland. It is a shy fish. It spawns about the end of April or beginning of May. It seldom attains a large size, none having been recorded above five pounds weight. In ponds fed by a rivulet they thrive well, and acquire a full size.

The chub does not afford so much diversion to the angler as trout, from being a dull fish on the hook. The larger ones are caught by dibbing, very early in the morning, with a brown beetle or cockchaffer; by daybreak the angler should be at the river, and, after baiting his hook, let him move it two or three times near the surface, as in the act of flying; then let it softly drop on the water, shaking the rod gently, which will cause the appearance of its struggling to escape: this attracts the chub, who are so fond of this bait, that they will rise two or three at a time to seize it. The large chub will also take minnows, small dace, or gudgeons, angled with in the same manner as for perch.

THE DACE.

This fish is likewise called the dare: it is very lively, is gregarious, and during summer is fond of frolicking near the surface. It haunts deep water near piles of bridges, where the stream is gentle, over gravelly, sandy, and clayey bottoms; deep holes that are shaded, under water-lily leaves, and under the foam caused by an eddy. During the warm months they are to be found in shoals in the shallows near to streams.

The dace spawns in June; is in season about three weeks after: it improves and is good about Michaelmas, but is best in February; and when just taken and broiled is thought by some more palatable than fresh herring.

This fish affords great sport to the angler. The baits used are the red worm, brandling, gilt-tail, cow-dung, and earth-bob; and any of the larvæ of insects which are bred on trees and bushes; and it will take any kind of fly. The flesh-fly, with the hook put into the back between the wings, answers well for surface-fishing: these flies should be kept in a phial with a metal top perforated with small holes.

After rains, when the rivers are nearly level with their banks, use the caterpillar-fly or a small red palmer, and a yellow gentle, (the yellower the better,) run the hook through its skin, and draw it up to the tail of the fly; then whip the surface, and the dace will rise freely. The dace generally weighs about twelve ounces, and we have never heard of it exceeding a pound and a half.

THE MINNOW.

This pretty little fish seldom exceeds three inches in length, and inhabits most of the rivers, brooks, and canals of Great Britain and Ireland. Its food consists of aquatic plants, worms, and small portions of animal substances. It spawns in June, and is very prolific.

In hot weather the minnow will bite eagerly all day, at the red worm, or indeed almost any other bait. The flesh of the minnow is well-flavoured, and in some places made into a dish called "minnow tansies."

The principal value of the minnow, however, to the angler is its use as a bait. When used dead they should be kept in bran, which dries up the superfluous moisture. The rod for taking minnow should be very small and slender.

SECTION VIII.

ABSTRACT OF THE GAME LAWS.

The last act relative to game was entitled "An Act to amend the laws in England relative to Game;" and was passed in the 1 & 2 year of the reign of William IV. cap. 32, 5th October, 1831.

Game defined.—The word "Game" includes hares, pheasants, partridges, grouse, heath or moor-game, black-game, and bustards; woodcock, snipe, landrail, hare, and rabbit. And the word "lord of the manor, lordship, or royalty," throughout the act includes a lady of the same respectively.—1 & 2 Wm. IV. c. 32.

Days on which Game shall not be killed.—Every person convicted of killing game on a Sunday, or Christmas-day, shall forfeit and pay for every such offence, a sum of money not exceeding five pounds.—1 & 2 Wm. IV.

Season for Hunting and Killing Game.—The season for shooting grouse, (called red-game,) or ptarmigan, commences on the 12th of August, and terminates on the 10th of December. Heath-fowl, or black-game shooting begins on the 25th of August, and ends on the 10th of December. Partridge-shooting is permitted from the 1st of September to the 1st of March. Pheasant-shooting commences on the 1st of October, and ends on the 1st of February. Bustard-shooting begins on the 1st of September, and concludes on the 1st of March. Possessin any of the above birds during the close season (with the exception of such as may be kept tame, or in a mew or breeding-place) subjects the party, on conviction before two justices, to a penalty of not more than twenty shillings for every head of such game so taken, as such justices shall think fit, together with the costs of conviction.

In New Forest, shooting heath-fowl is not permitted until the 1st of September.

Every person convicted of laying any poisonous ingredient on any grounds, enclosures, or highways where game resort to. is liable to a penalty of ten pounds.

The occupiers of grouse-mountains are forbidden to burn heath, furze, &c., between the 2nd of February and the 24th of June, upon pain of being committed to the house of correction, there to be whipped and kept to hard labour for a period not exceeding one month, nor less than ten days.

Wild-ducks, widgeons, teal, and other wild fowl must not be shot or taken in any way between the 1st of June and the 1st of October: transgressing this law subjects the person to a penalty of five shillings each

Hare-hunting is from Michaelmas (29th of September) to Candlemas (2nd of February).

Tracing hares in the snow subjects the offender to a fine of twenty shillings.

For woodcocks and snipes there is no specified time, as they are birds of passage.

Persons trespassing in the daytime upon lands in search of game are liable to a penalty of forty shillings and costs; and if more than five persons are found so trespassing in pursuit of game, woodcocks, snipes, quails, landrails, or rabbits, each person shall forfeit any sum not exceeding five pounds, as *one* justice may think fit. And where the occupier of the land, not being entitled to the game, allows any person to kill it, the party entitled to the game may enforce the penalty. Such trespassers may be required to quit the land, and to tell their names and abodes, and in case of refusal may be arrested, the penalty not to exceed five pounds; but parties so arrested must be discharged unless brought before a justice within twelve hours. The same penalty besides costs, applies to one or more persons, who, being armed with a gun, use violence, menace, or intimidation to prevent any person approaching them to require them to quit the land and to tell their names, in addition to any other penalty to which they are liable under this act.

The penalty of trespass in the daytime in her majesty's forests, &c., is forty shillings.

Persons not having right or permission to kill game, who shall wilfully take out or destroy in the nest, the eggs of any game-bird, swan, wild duck, teal, or widgeon, or willingly have possession of the same, shall be liable to a penalty of five shillings for every egg found in his possession, with costs.

CERTIFICATE.—Every person in Great Britain and Ireland (except the royal family) who shall use any dog, gun, net, or any other engine for the taking or killing of game (not being a gamekeeper) shall annually procure a certificate from the collector of taxes, that he is charged with and has paid a stamp-duty of three guineas and a half, together with one shilling for the receipt of the same. This receipt to be delivered to the clerk of the commissioners acting for the district, who will in return provide the requisite certificate, without any additional charge. A gamekeeper's certificate must be obtained in the same way, the expense whereof is twenty-five shillings, if his master have assessed servants; and if not an assessed servant, then his licence will be charged three guineas and a half. The following exceptions are, however, made:—taking of woodcocks or snipes in nets or springs, and the taking or destroying rabbits in warrens, or any inclosed ground, or by any person in land which he occupies.

It must be borne in mind that merely possessing the certificate will not entitle a person to kill game: he must, besides, possess the qualification by property. If a qualified person sport *without* a certificate, he is liable to a penalty of twenty pounds: if a non-qualified person kill or hunt for game *with* a certificate, he still, notwithstanding, subjects himself to a penalty of five pounds.

The clerk to the commissioners of taxes must annually insert in one or more newspaper of the county the names and residences of persons who have procured certificates —1 & 2 Wm. IV.

Qualification.—In the reign of Richard II. an act was passed making the qualification for sporting forty shillings. James I. raised it to ten pounds. These statutes have never been formally repealed; but have, notwithstanding, become a dead letter, in consequence of the following act of 22 & 23 Charles II. c. 25.

" Any person or persons, not having lands of inheritance, or freehold property, in his own or his wife's right, of the clear annual value of one hundred pounds, or leasehold property for life, or a term of ninety-nine years, or longer, of the clear yearly value of one hundred and fifty pounds, (that is, assessed to that amount, and clear of mortgage or other incumbrance,) are declared ineligible *to have* or *to keep for themselves* or *any other person*, guns, bows, greyhounds, setting-dogs, ferrets, lurchers, nets, harepipes, gins, snares, or other engines for the taking or killing rabbits, hares, pheasants, partridges, or other game."

The qualification of Anne and Charles II. are what is now acted upon, and may be briefly stated:—" Pursuing or killing game without the qualifications above required, subjects the offender to a penalty of five pounds; (supposing him to have a certificate; but if he have no certificate, he is liable to an additional penalty of twenty pounds;) and any person not qualified is liable to the same penalty for having game in his possession, unless it is ticketed by a qualified person."

Exceptions to the General Rule of Qualification.—By the above-recited statute of Charles II. the following persons are qualified by birth, although they may not possess any property whatever: viz., the son and heir-apparent of an esquire, or other person of higher degree. Esquires according to law are the four esquires of the king's body; the younger sons of noblemen, and their male heirs for ever; the eldest sons of baronets, Knights of the Bath, and Knights Bachelors and their heirs male in the right line. Persons of higher degree than esquires are doctors in the three learned professions, serjeants-at-law, and all officers in the army from captains upwards, and such subaltern officers as may have esquire attached to their names in their commissions. A justice is an esquire so long as he continues in the commission of the peace. Neither esquires, however, nor any of those persons of higher degree, are qualified to kill game, unless they have the requisite property, whilst their eldest sons are qualified although possessing no estate whatever!—1 Term Rep. 44.

In the eye of the law a vicar has not an estate of inheritance in respect of his church, but only for his life; and, consequently, must possess one hundred and fifty pounds per annum.—Caldecot's Cases, 188.

The owners or keepers of forests, parks, chases, or warrens, being stocked with deer or rabbits for their necessary use, are qualified without the requisite estate, merely as far as relates to said forests or parks, &c.

The lord of the manor, or royalty, is qualified in a legal sense, although his property may be insufficient according to the statute. In the same manner a gamekeeper may be said to be qualified, as he has a legal right to shoot on the manor for which he is deputed.

Any justice of the peace, or lord or lady of a manor, may take away any hare, or other game, as well as any dogs, found in the possession of an unqualified person.

Gamekeepers, or any other persons, may, by warrant of a justice of peace, on proper information, search the houses or other places of unqualified persons, and seize and keep for the use of the lord or lady of the manor, or destroy any dogs, nets, or engines, &c., as before named.

The 1st of James I. c. 27, inflicts a penalty (to the poor) of twenty shillings, or three months' imprisonment, for shooting or destroying game; and also requires two sureties in twenty pounds each not to repeat the offence. And the possession of game, by statute of Wm. & Mary, c. 23, s. 3, subjects an unqualified possessor to imprisonment for not more than one month nor less than ten days, and to be whipped and kept at hard labour. The same act also specifies, that if any inferior tradesman, (whatever property he may possess,) apprentice, or dissolute person, shall hunt, hawk, fish, or fowl, such person may be sued for wilful trespass the first time he comes on any person's ground, and if found guilty, must pay the full costs of suit.

Trespass.—Either a qualified or an unqualified person may commit a trespass, by entering upon the grounds of another without the permission of the occupier, and doing some damage to his property, however small, for which an action may be brought, and satisfaction obtained, according to the extent of the mischief or the malicious intention of the trespasser. But in order to prevent, as far as possible, vexatious litigation, it is enacted, by 43 Eliz. and 22 & 23 Charles II., that where less damages than 40 shillings are given by the jury, the plaintiff shall be allowed no more costs than damages: unless (Wm. & Mary, 8 & 9, c. 11) it shall appear that the trespass was wilful and malicious, in which case the plaintiff shall recover full costs of suit.

A man becomes a *wilful* and *malicious* trespasser in a legal sense, if he enter again upon the land or manor from which he has been warned off, either in writing or verbally. The occupier of land may demand the address of a sportsman, or the sight of his certificate, as well as his permission to shoot thereon, and upon refusal it subjects the sportsman to a penalty of twenty pounds. This demand may likewise be made by any assessor or collector of taxes of the parish, commissioner, surveyor, inspector, gamekeeper of the manor, or landlord or lessee of the land upon which the trespasser is found.

A verbal notice from the occupier of the land is sufficient; and, indeed, the occupier of land has a legal right to order the lord of the manor, or even his own landlord, to abstain from sporting on the ground he occupies, unless he has secured this privilege by a clause in the lease.

A verbal notice from either a keeper or a lord of the manor, is not sufficient; keepers usually carry printed notices, which should be in the following style:—

"*Hollymount, August 20th*, 1847.

"To Mr. ———,

"I hereby give you notice, that if you shoot, hunt, net, hawk, or take fowl, or fish, with any engine, or by any other means destroy game, or fish upon any of my lands, manors, or royalties, within —— in the parish of ——, I shall deem you a wilful trespasser, and proceed against you as the law directs.

"Signed, ——— ———."

It is necessary that this notice be signed by every tenant or occupier of land throughout the manor; and if any tenant witholds his or her signature, the notice will not extend to the land of which he or she is in possession; but the mandate of the landlord is generally sufficient if no remedy is inserted in the lease. As it seldom happens that the lord is owner of the entire fee-simple of the manor, occupiers of land, independent of him, may refuse to back his notices; they, of course, have not the effect of debarring the sportsman from such parts, if the occupier does not object.

A notice remains in force during the life of the individual to whom it is given, except in cases where a change of lord of the manor takes place, by death or otherwise; then, a second notice becomes necessary; or, if there is any change in the occupation of the land, a new notice must be issued by such occupier.

N.B. If a sportsman intrude upon ground from which he has been legally warned off, it is deemed a wilful trespass, although no damage may have been done by him.

LEGAL PROPERTY IN GAME.—The legal property which qualified persons have in game, generally continues so long *only* as the game remains within the limits of the manor, or liberty of the owner; nevertheless it is held, that if, after having been started upon a person's own grounds, it be pursued and killed on those of another, it will be rightfully the property of him who started it, because the possession which he acquired by finding it within his own manor or liberty, is continued by the immediate pursuit.—11 Mod. Rep. 75. But if it be started on the ground of another man, and killed there, it will belong to him on whose ground it was killed, this property arising *ratione soli.*—Lord Raymond, 251.

If game be started on the ground of another person, and it be killed on the property of a third person, it will belong neither to him on whose ground it was started, nor to him on whose ground it was killed, but to the person who killed it, though he will be guilty of a trespass on the grounds of both the other persons, if he shall not have obtained leave to hunt on them.

But if a stranger steal game in the chase or free warren of one man, and hunt it into the liberty of another, the property will continue in the owner of the chase or warren, and the keeper may pursue and retake it; for, whilst the keeper pursues it, it does not in law pass into a new liberty.

A CHASE.—This is a privileged place or enclosure for the keeping of beasts of chase, or royal game, with exclusive power of hunting therein.—2 Blackstone, Comm. 38.

A FREE WARREN.—This is a franchise granted by the king, for the custody of beasts and fowls of warren, viz.: hares, rabbits, partridges, pheasants, heath-game, &c. This franchise is now, however, little known or attended to, the name being principally applied to ground set apart for breeding rabbits.—2 Black. Com.

OF TRAFFICKING IN GAME.—The act 1st & 2nd Will. IV. repeals all former acts, which prohibit the sale of game, and orders that in every month of July, the justices of each county, &c., shall hold a special session, on seven days' notice, for the purpose of granting licences to deal in game; and the majority of justices assembled at such session, not being less than two, are authorized to grant, if they think fit, to a householder, or keeper of a shop or stall, and not being an innkeeper or victualler, or licensed to sell beer by retail, nor being the owner, guard, or driver of any mail-coach, or of any stage-waggon, &c., nor being a carrier or higgler, nor being in the employment of any such persons, a licence to empower the person to whom it is granted to buy game from any person lawfully authorized to sell it, and to sell the same at one house, shop, or stall only, kept by the person so licensed; provided that every person so licensed shall affix to some part of the outside of the front of his house or shop, in legible characters, his Christian and surname, with the words, "*Licensed to deal in Game;*" such licence to continue in force one year after the granting thereof. Persons licensed to deal in game must take out a certificate with a duty of two pounds.

Collectors to make out a list of persons licensed to deal in game; and where there are partners in a firm, one licence is sufficient. When any convictions occur the licence becomes void.

Any person selling game without a licence, or any licensed person who possesses a certificate offering to sell game to an unlicensed dealer, is liable to a fine of forty shillings and costs.

Innkeepers may, without a licence, sell game for consumption in their own houses, such game having been procured from a licensed person, but not otherwise.

Dealers are liable to a penalty if game be found in their possession ten days after the expiration of the season for killing the same, and other persons after forty days.

A Gamekeeper.—By the 23rd of Charles II., c. 22, s. 2, lords of manors or other royalties, not under the degree of an esquire, are authorized to appoint gamekeepers, and to take and seize all guns, dogs, &c., which are used for the destruction of game. This act, however, merely empowers gamekeepers to use means to prevent the illegal destruction of game; but the 5th of Anne, c. 14, s. 4, enables these gamekeepers to kill game upon the manors, for which they are licensed, for the use of their master. No gamekeeper can sell game with a certificate on which less than three guineas and a half are paid, except on authority of his master; and any gamekeeper so disposing of game without a written authority, may be proceeded against as if he had no licence at all.

By 9th Anne, c. 28, only one gamekeeper can be appointed to one manor. By 25th Geo. III., c. 5, s. 2, the clerk of the peace shall register and grant certificates of the deputation of every gamekeeper, under a penalty of twenty pounds. The royal family and their gamekeepers require no certificate. The following is the form of a gamekeeper's deputation:—

"Know all men by these presents, that I, A. B., of ——, in the county of ——, lord of the manor of ——, in the same county, have nominated, deputed, authorized, and appointed, and by these presents do nominate, depute, authorize, and appoint ——, of ——, to be gamekeeper of and within my said manor of ——, with full power, licence, and authority, to pursue, take, and kill any hare, pheasant, partridge, or other game whatsoever, in and upon my said manor of ——, for my sole and immediate use and benefit; and also to take and seize all such guns, bows, greyhounds, setting-dogs, lurchers, or other dogs, ferrets, trammels, low-bells, hays, or other nets, hare-snares, or other engines, for the pursuing, taking, or killing of hares, rabbits, pheasants, or any other game, as shall be used within the precincts of my said manor, by any person or persons who by law are prohibited to keep or use the same. In witness whereof I have hereunto set my hand and seal, this —— day of ——

—— —— (*Seal*)

'Sealed and delivered in the presence of ——, of —— aforesaid."

A gamekeeper must carry his deputation as well as his certificate constantly with him, as without them he cannot legally demand the name or certificate of any other person; and with them his authority ceases whenever he is out of the precincts of his own manor.

A gamekeeper being qualified in his own right has no occasion to enter his deputation. But a keeper is not authorized, by any statute, to seize game which he may find in the possession of poachers, even on his own manor, though it be lawful to take their dogs, guns, and other implements.

Gamekeepers, if detected killing game off the manors for which they are appointed, are liable to the same penalties as unqualified persons; the only difference in which case is, that a gamekeeper's dogs and gun cannot be seized; while those of an unqualified person may be taken. But although there is no legal authority for seizing the gun or dogs of a gamekeeper, should he be found *beating only* for game on the manor of another party than that for which he is licensed, he is liable to the penalty of twenty pounds, as having no certificate for such ground, and also in five pounds more as being disqualified.

By 43rd Geo. III., c. 23, lords of manors are enabled to appoint and depute any person whatever as gamekeeper, whether acting in that capacity to any other person or not, or the servant of any other person, qualified or unqualified, to kill game within a specified manor for his own use, or for the use of any other person or persons, to be specified in such appointment or deputation, whether qualified or not; nor is it necessary such person should be entered or paid for as the male servant of the lord who thus gives the deputation; and gamekeepers thus appointed are to have the same rights and privileges as if they were legally qualified and appointed as gamekeepers to the lords of such manors, under any laws in force prior to the passing of this act.

On the appointment of a new gamekeeper it is not necessary to take out a new certificate; but the name and place of abode of the new keeper must be indorsed on the old certificate, by the clerk to the commissioners of the district, otherwise the penalties of the statute will be incurred.

With respect to the appointment of a gamekeeper—the statute of 21st Charles II., c. 25, s. 2, enacts that lords of manors or other royalties, *not under the degree of an esquire*, may appoint gamekeepers, from which it is evident that persons under that degree have no legal right to depute or appoint gamekeepers, and that gamekeepers appointed by unqualified persons are liable to the penalties before mentioned. We have already pointed out, at page 910, who are esquires, and other qualified persons.

LAWS TO PREVENT THE IMPROPER DESTRUCTION OF HARES.—By the 14th & 15th Henry VIII., c. 10, the penalty for tracing and killing a hare in the snow is six shillings and eight pence; and by the 1st James I., c. 27, three months' imprisonment, unless the offending party pay to the churchwardens, for the use of the poor, twenty shillings for every hare; or within one month after commitment becomes bound, with two sureties, in £20 each, not to commit the like offence. Two witnesses and two justices are necessary. The same penalty applies to taking hares with hare-pipes, snares, or other engines. By the 22nd & 23rd Charles II., c. 25, persons detected setting snares, &c., must recompense the injury, and pay down instantly ten shillings for the use of the poor, or be committed to the house of correction. One witness and one justice only necessary for conviction; but the charge must be brought forward within one month after the offence.

Rabbits.—By 3rd James I., no person has a right to kill rabbits, unless he is possessed of hereditaments of the yearly value of forty pounds, or be worth in goods two hundred pounds, or have an inclosed rabbit-warren of the value of forty shillings a year. An infringement of this law subjects the offender to have his dogs or engines seized by *any* person having hereditaments in fee, in tail, or for life, of the annual value of one hundred pounds in his own right, or that of his wife, who is entitled to keep them for her own use.—3rd James I.

Any person who enters the ground lawfully used for breeding or keeping rabbits, (whether inclosed or not), and chases or kills any of these animals, without leave of the owner, or without having lawful title to do so, shall, upon conviction by one witness, or his own confession before a justice, forfeit treble damages and costs, be imprisoned for three months, and find security for future good behaviour; (prosecution must, however, be commenced before the expiration of one month after the offence has been committed;) and make such satisfaction as the justice shall think proper; and forfeit, for the use of the poor, a sum not exceeding ten shillings, or be committed to the house of correction for a term not exceeding one month. The same penalty applies to setting snares or other engines.—22nd & 23rd Charles II., c. 25.

By 9th Geo. I., c. 22, (usually called the Black Act,) any person entering, armed and disguised, any grounds where rabbits are lawfully kept, and robbing the same, or who shall, though not armed and disguised, rescue any person in custody for such an offence, or procure any person to join him in such an act, such person shall be deemed guilty of felony without benefit of clergy.

By the 5th Geo. III., c. 14, it is transportation for seven years, or such lesser punishment by whipping, imprisonment, or fine, as the court shall think fit, for any person entering any rabbit-ground during the night, and taking or killing any rabbit, or aiding and assisting in such act, without the consent of the owner.

But in cases where rabbits come upon the ground of another and destroy his corn or herbage, it is lawful for the injured person to shoot them.

Pigeons.—Any person who shall shoot or destroy a domestic pigeon, shall, on conviction, before one justice, by the oath of two persons, or on his own confession, pay, for the use of the poor, twenty shillings for every pigeon, or be committed to gaol for three months; and within one month thereafter find securities not to offend again.—2nd Geo. II., c. 29.

By 7th & 8th Geo. IV., c. 29, s. 33, if any person shall unlawfully and wilfully kill, wound, or take any house-dove or pigeon, under such circumstances as shall not amount to larceny at common law, every such offender, being convicted thereof, before one justice of the peace, shall forfeit and pay, over and above the value of the bird, two pounds. A man may, however, shoot pigeons if destroying his corn.

Duty on Dogs.—Greyhounds, pointers, setters, spaniels, lurchers, and terriers are liable to a duty of fourteen shillings for each, and any person paying assessed taxes is subjected to a tax of eight shillings for each dog, not of the above description.

Stealing Dogs.—Any person stealing a dog from its owner, or any one to whom it may have been intrusted, or who shall harbour, sell, buy, detain, or keep any such dog, knowing the same to be stolen, and who shall be convicted of the same by the oath of *one* witness, or his own confession, before two justices, shall, for the first offence, forfeit a sum not exceeding thirty pounds, nor less than twenty pounds, at the discretion of the said two justices, together with all charges previous to and attending such conviction, to be ascertained by the said justices; and if the penalty is not forthwith paid, the offender shall be committed to the house of correction, or common gaol, for a period of not less than six nor exceeding twelve months, or until such penalties and charges are paid.

For a second offence the penalty is fifty pounds, and not less than thirty pounds, together with expenses; and in case of nonpayment to be committed to either the house of correction or gaol for eighteen months, and not less than twelve months, or until the same be paid. One moiety of such penalty to be paid to the informer, and the other to the poor of the parish where the offence has been committed; and such justices may order the offender to be publicly whipped within three days after commitment in the town in which such gaol or house of correction shall be, between the hours of twelve and one in the daytime.

A justice may grant a warrant to search for any dog stolen, and in case either the dog or his skin be found, the one or the other shall be restored to its owner, and the person in whose custody such dog or skin was found, shall be liable to the above penalties.

If a mischievous dog is allowed to go at liberty unmuzzled, the owner may be indicted, and an action of damages will, in such case, lie against him; but such action cannot be brought unless the owner had notice of the dog having bitten some person before.

If a man keep a dog accustomed to bite sheep, an action will lie against him, if it can be proved that the owner was aware that the dog was addicted thereto; and his having once wounded or killed a sheep, is sufficient to constitute his character as a sheep-biter.

If a dog attack another, the owner of the dog attacked may beat and even kill his enemy, in order to save his own dog.

INDEX.

A.

Abdomen, contents of, 269; peritoneum, 269; diaphragm, 270; stomach, 272; liver, 276, omentum, or caul, 277; spleen, 277; pancreas, 278; kidneys; 278; bladder, 281; intestines, 282.
Abdomen of horses, diseases of, 88; inflammation of the liver, 89; ditto of kidneys, 91, ditto of bladder, 93; ditto of bowels, 96; ditto of mucous membrane, 96; jaundice, 89; spasmodic colic, 97; hernia, 91; stone in bladder, 94; diabetes, 94; staling of blood, 95; entanglement of bowels, 100; stones in ditto, 100; intussusception of, ditto, 101; worms in ditto, 101; bots in ditto, 103.
Abdomen, diseases of, in cattle, 494; inflammation of the bowels, 494; ditto of kidneys, 496; ditto of bladder, 497; ditto of womb, 498; red-water, 499; black-water, 501; gripes, 504; diarrhœa, or looseness, 506; scouring rot, 509; fardel-bound, 512; mortification, 514.
Abortion in cattle, 534.
Age of neat cattle, 550.
Angling, directions for, 852.
Ass, sketch of its history, 439.

B.

Back sinew, ossification of, 127,
Back sinews, sprain of, 117.
Baits, for fishing, and their preservation, 855.
Barbs, in horse's mouths, or paps, 39.
Boots, water and poultice for horses, 400.
Bitten tongue, in horses, 38.
Breeding horses, 338; training, 348.
British forests, number of, 735.
Broken knees, in horses, 110.
Broken wind, in ditto, 74.
Bronchitis, in ditto, 71.
Bursting of gun-barrels, 837.

C.

Cadis, or case-worms, 859.
Canker in the mouth of horses, 36.
Capped hocks, in ditto, 131.
Cartilages in foot of horses, 257; false ditto, 258.
Cellular substance, swelling of, 141.
Chaps, in horned cattle, 545.
Chest, diseases of, in cattle, 477; inflammation of the lungs, 477; ditto of stomach, 479; ditto of liver, 480; fog sickness, 480; loss of cud, 485; catarrh, or cold, 486; cough, 488; hoose, 488; staggers, 490; pantaise, 491; jaundice, 491; poisons, 493.
Chest of horses, diseases of, 55.
Chronic cough, in ditto, 78.
Coffin-joint, sprain of, in ditto, 125.
Common cold, in ditto, 70.
Cords in cattle, 549.
Coursing, 773.
Cow-pox, 519.
Cow-houses, 551.
Clipping a horse, 296.
Clothing of horses, 366,
Curb, or swelling below the hock, 127, 133.

D.

Diseases of the neck in horses, 48.
Distemper in ditto, 80.
Dogs, feeding, training, &c. 665; greyhounds, 669; training fox-hounds, 670; ditto pointers and setters, 672; vocabulary, 673; maxims, 674; retrievers, 680; water-dogs, 681; the kennel, 684.
Dogs, used in field-sports and for domestic purposes, 688; staghound, 691; fox-hound, 693; harriers, 694; beagle, 695; terrier, 696; otter-hound, 698; greyhound, 698; wolf-dog, 701; English pointer, 704; English setter, 706; springer, 708; cocker, 710; king Charles's dog, 711; large water-spaniel, 712; small ditto, 713; mastiff, 713; bull-dog, 716; bull-terrier, 719; Newfoundland dog, 721; shepherd's dog, 724; coach-dog, 729.
Dogs, diseases of, 613; bronchitis, 615; ulceration of the ear, 616; coughs, 616; inflammation of the lungs, 617; ditto of the bowels, 631; ditto of the bladder, 634; asthma, 618; distemper, 619; hydrophobia, 627; bites of vipers, 628; poison, 629; blindness, 630; worms, 634; dropsy, 640; costiveness, 640; colic, 641; diarrhœa, 641; blend-water, or bloody-urine, 642; piles, 643; fits, 643; diseases of the eye, 645; canker in the ear, 647; external ulcer of the ear, 647; common mange, 648; red ditto, 651; foul coats, 652; sore feet, 653; wounds, 653; sprains and bruises, 654; scalds, 655; rickets, 655; thorns, 656; fleas and ticks, 656.
Dogs, operations on, 656; method of giving a bolus, &c., 657; worming, 657; fractures, 657; cropping, 658.
Dogs, breeding, &c., 659; parturition, 665.
Drink of horses, 345.
Downfall, or sore udder, in cows, 543.

E.

Elbow, fracture of, 109; enlargement of, 109.
Epilepsy, or fits, in horses, 17.
Eruption on the eyelids, in ditto, 45.
Exercise of horses, 364.
Eye, diseases of, in horses, 41.

F.

Falling down of the calf bed, in cows, 542.
Fall, in cattle, 522.

Farcy, 25.
Febrile diseases in cattle, 515.
Feeding cow-house, 553.
Feeding-houses, 339.
Felon, 521.
Fetlock, sprain of, 123: cutting of, 123.
Feet of horses, management of, 368.
Fever, in horses, 66.
Field-sports, generally, 731.
Fishing, generally, 840.
Fish, different species taken by the angle—salmon, 870; salmon-fry, 880; bull-trout, 881; parr, 882; smelt, 883; common trout, 884; great grey trout, 886; Welch charr, 887; northern charr, 887; perch, 889; tench, 893; pike, 894; carp, 903; bream, 904; roach, 905; chub, 905; dace, 906; minnow, 907.
Fits, or epilepsy, 17.
Fistulous withers, 85.
Foot, bones of, 244; external parts, 251.
Foot, diseases of, 149; acute founder, 149: chronic founder, 153; contraction, 154; sand-crack, 162; navicular joint, 165; false quarter, 168; tread, or overreach, 170; quittor, 171; prick in crust, 173; corns, 176; canker, 180; thrush, 182; ossification of cartilages, 186; weakness, 187.
Fracture of the skull, 48.

G.

Gadfly and wurbles in cattle, 524.
Game laws, 908; game defined, 908; days on which game may not be killed, 908; seasons for hunting and killing game, 908; certificate, 909; qualification, 910; exceptions, 910; trespass, 911; legal property in game, 912; a chase, 913; a free warren, 913; trafficking in game, 913; a gamekeeper, 914; improper destruction of game, 915; rabbits, 916; pigeons, 916; duty on dogs, 917; stealing dogs, 917.
General history of the horse, 413.
General blindness and imperfect vision, 46.
Gestation, parturition, &c., in sheep, 589; ram, 589; leaping, 596; ewe, 592; lambing, 592; weaning lambs, 594; castrating ditto, 594.
Gestation and parturition in cattle, 532
Gigs, 39.
Glanders, 18.
Grease, 144.
Grogginess, 122.
Grooming horses, 365.
Gutta serena, 45.

H.

Hair, colour of, in horses, 297.
Hare, natural history of, 782.
Haw of the eye, 44.
Head, diseases of, 5.
Heart of the horse, 262.
Hide-bound, 301.
Hock-joint, bones of, 241.
Hock, enlargement of, 133
Horned cattle, diseases of, 464: inflammation of the brain, 468; choking, 470; locked jaw, 471; murrain, or gargle, 473; snores, 476.
Horse, anatomical structure of, 189; bones of skeleton, 189; head, 191; internal anatomy of, 194; palate and teeth, 198; external anatomy of, 199; eye, muscles of, 201; visual structure of, 205.
Horses, British, 420; racer, 420; hunter, 421; hackney, 422; charger, 424; coach, 425; Cleveland bay, 425; draught, 425; Suffolk punch, 427.
Horses, Asiatic, 428; Arabian, 428; Persian, 432; Tartar, 433; Toorkoman, 433; Turkish, 434.
Horses, African, 434; Barb, 434; Egyptian, 435; Nubian, 435.
Horses, American, 436.
Horses, remarkable ones, 458; Godolphin Barb, 459; Eclipse, 459; Flying Childers, 462.
How to buy a horse, 402.
Hunting, stag, 740; fox do., 744; hare do., 759.
Hydrophobia, 627.

I.

Inflammation of the eye in horses, 41.
Inflammation, local, 61; external, 63.

J.

Jockey Club, rules of the, 447; decisions of, 449.
Jugular vein, inflammation of, 53.

K.

Knee-tied, 116.

L.

Lampas, 32.
Larvæ used in fishing, 864.
Lice on cattle, cure for, 527.
Limbs, muscles of, 232; shoulder, outside of, 232; inside of, 237; thigh, outside, 238; ditto, inside, 240.
Lips, diseases of, in horses, 40.
Locked-jaw, or tetanus, in horses, 14; in cattle, 471.
Lungs, inflammation of the, 55.
Lungs of the horse, 259.

M.

Mad staggers, 11.
Mallenders and sallenders, 132.
Malignant epidemic, 79.
Management and feeding of cattle, 551.
Mange, 305.
Megrims, 5.
Milk fever, 517.
Mule, 441.

N.

Nasal gleet, 30.

O.

Obstruction of the gullet, 52
Operations on the horse, 311; bleeding, 312; blistering, 317; firing, 321; cutting nerve, 323; setons, 327; docking, 328; nicking, 329.
Ophthalmia, in horses, 42.

P.

Palsy, 18.
Parturition, or calving, 536.
Pastern, bones of, 245, 247.
Piping, 77.
Pleurisy, 64.
Poll-evil, 48.
Polypus, 32.
Prognostics of the weather, 844.
Pulse of the horse, 265.

R.

Rabies, or madness, 1[illegible].
Race-horse, equestrian feats, 453.
Rearing of calves, 456.
Ringbone, 126.
Roaring, 51 and 76.
Round-bone, sprain of, 129.

S.

Saddle-galls, 88.
Scab, or mange, in cattle, 518.
Sheep, diseases of, 560 ; staggers, 561 ; blindness, 564 ; catarrh, 564 ; rot, 565 ; inflammation of the lungs, 567 ; grass-ill, 568 ; milk-ill, 568 ; jaundice, 568 ; red-water, 569 ; red-water blibes, 571 ; braxy, 571 ; diarrhœa, 573 ; dysentery, 574 ; colic, 575 ; pinding, 575.
Sheep, external diseases, 576 ; scab, 576 ; pelt-rot, 580 ; erysipelas, 580 ; cramp of the legs, 581 ; leg-evil, 581 ; foot-rot, 582 ; vermin, 584 ; wounds, 585 ; fractures, 586 ; bleeding, 586.
Sheep, age of, as indicated by the teeth, 587.
Sheep, management of, 596 ; drifting snow, 597 ; effects of rain, 598 ; heat and flies, 599 ; washing, 600 ; shearing, 600 ; food, 601 ; fattening, 602.
Sheep, different breeds of, 602.
Shoeing horses, 388 ; different kinds of shoes, 393, &c.
Shooting, pheasant, 785 ; grouse ditto, 794 ; ptarmigan ditto, 800 ; black-cock ditto, 801 ; partridge ditto, 803 ; quail ditto, 809 ; land-rail ditto, 811 ; woodcock ditto, 815 ; snipe ditto, 822 ; wild-duck ditto, 830.
Shooting, rules to be attended to in, 834.
Shot, different kinds, 836.
Shoulder, sprain of, in horse, 107.
Singing a horse, 296.
Skin, diseases of, 288 ; cuticle, 289 ; cutis, 290 ; rete mucosum, 292 ; pores, 293 ; hair, 294.
Spavin, 136 ; bog or blood ditto, 140.
Speedy cut, 116.
Splent or splint, 114.
Stabling and exercise of horses, 356.
Staggers in horses, 8 ; in horned cattle, 490 ; in sheep, 561.
Stifle-joint, sprain of, 129.
Stomach of horse, 272.
Stomach staggers, 68.
Strains and bruises in cattle, 528.
Strangles, 33.
String-halt, 135.
Submaxillary glands, swellings of, 33.
Surfeit, 303.
Suspensory ligament, rupture of, 122.
Swelling of the udder in cattle, 535.
Swelled legs, 141 ; from inactivity, 142 ; after grass, 142.
Swine, diseases of, 604 ; inflammation of the lungs, 605 ; quinsy, 606 ; blood-striking, 606 ; mange, 607 ; gargut, 608 ; cracked ears, 609.
Swine, breeding, &c., 609.

T.

Tail-worm in cattle, 527.
Teeth, diseases of, 39.
Teeth of the horse, their development, 210 ; indications of age, from, 213.
Terms and phrases used in hunting, 737.
Tetanus, or locked-jaw, 14 ; ditto in cattle, 471.
Thick wind, 72.
Thoroughpin, 130.
Tongue-bladders, 37.
Tuberosities of haunch, fracture of, 128.
Turf, laws of the, 443 ; racing, 444 ; abbreviations of, 450.

V.

Various breeds of cattle, 556 ; short-horned, 556 ; kyloes, 558 ; long-horned, 558 ; galloway breed, 558 ; milch cows, 559.
Vices of the horse, 367 ; restiffness, 368 ; rearing, 371 ; backing, 372 ; kicking, 374 ; biting, 376 ; seizing the check of the bit, 376 ; running away 377 ; shying, 377 ; restiffness while shoeing, 382 ; crib-biting, 383 ; wind sucking, 385 ; not lying down, 385 ; slipping the collar, 385 ; pawing, 386 ; rolling, 386 ; weaving, 389 ; tripping, 387.

W

Warbles, 87.
Warts, 45, 310.
Weather for angling, 842.
Wheezing, 77.
Whistler, 78.
Windgalls, 120.
Wounds in cattle, 529.

THE END.

J Rickerby, Printer, Sherbourn Lane, King William Street.

THE GLASGOW VETERINARY COLLEGE INCORPORATED